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Tampering with Transport

RE-ORGANISATION of the structure and finances of the British Transport Commission is the object of legislation to be introduced by the Government in the autumn, in the next session of Parliament. Apart from machinery for making the Regions of British Railways and other undertakings of the British Transport Commission self-accounting and for a straight Exchequer loan for those elements of the nationalised railway system which are found not to be able severally to pay their way, it is hard to see what form the Bill could take—unless the Special Advisory Group under Sir Ivan Stedeford, after considering the information and advice it is now collecting, produces surprise measures out of its hat. One must hope that the Group appreciates the dangers inherent in any attempt to re-phase the modernisation plan. Much nonsense has been talked about a "commercial basis" for the railways—as though the railways were not already under the obligation to pay their way. It seems most improbable that the Government would risk unpopularity by insisting on too rigorous an interpretation of the fiat that the railways must reduce their uneconomic activities. Many lines and stations, bound to continue to lose money heavily, are being closed; but no Government will countenance a rise in season ticket rates sufficient to make commuter traffic remunerative. The staff of the Commission is employed on activities, such as central purchase and design and allocation of motive power, rolling stock, and electrical, signalling, and other equipment, essential for efficient organisation. Many of them, especially the officers, are working to capacity. If, in a desire for decentralisation, these activities were delegated to Regions, additional manpower—and time—would be needed there, but that would not help to increase traffics. Government spokesmen have referred complacently to Sir Ivan Stedeford and his colleagues as businessmen who will bring order and common sense to (by implication) an un-businesslike undertaking. They overlook the fact that the membership of the Commission and Area Boards includes men who are businessmen in the accepted sense, apart from those who have distinguished themselves in other spheres. Nor, in the field of railways, can the experience be discounted of former managers and senior officers who successfully occupied high positions on railways before and after nationalisation. Whatever the Government decides, it will have a disturbing effect on the railways, which at this time need to be left alone to manage their affairs.

Mr. S. B. Taylor

THE death at the early age of 59 of Mr. S. B. Taylor, Chief Secretary of the British Transport Commission, deprives the transport world of a successful Secretary of the largest transport undertaking in the world, and a man zealous in promoting the study of transport and the professional education of aspirants to high positions, and one always ready to help those who sought his advice. On the Great Western Railway his ability and industry as a junior clerk brought him under special notice on the personal staff of the Secretary, and his rise in the Secretary's Department was rapid, to Acting Secretary, aged 47, on the retirement of Mr. F. R. E. Davis. Mr. Taylor bore the additional burden occasioned by nationalisation, with which he was concerned in a broader sphere on his appointment soon afterwards as Deputy Secretary of the Commission, and from 1951, when he succeeded Mr. Miles Beevor, as Chief Secretary. He was responsible for much of the administrative work to implement the re-organisational measures initiated by the Conservative Government on its return to power in 1951. The award by the University of London, of the Sir Ernest Cassel travelling scholarship, enabled him to gain a wide knowledge of transport and business methods in North America. He was active in the affairs of the Institute of Transport, of which he had been Honorary Treasurer, and of the Chartered Institute of Secretaries.

Loans for Railways Overseas

THE extent of loans for railway equipment and construction made by the International Bank for Reconstruction & Development, the World Bank, is shown in a booklet published by the Bank. Railways for which loans have been made include those of India, where development has been helped by World Bank lending since 1949; Siam; Pakistan; East Africa; Rhodesia; the Sudan; Nigeria; Mexico; and Colombia. The measures made possible range from new construction on a large-scale in Nigeria and Colombia, to purchase of diesel locomotives by Pakistan. British industry has benefited from World Bank activities; but there have been other forms of aid, such as those associated with purchase of material—diesel locomotives, for example, from suppliers in the U.S.A. There may be reasons why Britain cannot follow the policy of the U.S. Import Export Bank, but if the British Government were to encourage, and British investors could be persuaded to venture, further loans to under-developed railways overseas, industry in this country would clearly benefit from increased consideration by railway administrations overseas, when placing orders, of the proven quality of British products.

Brazilian Interest in British Products and Practice

MANUFACTURE of motive power and rolling stock, including railcars, and signalling equipment, and diesel maintenance on British Railways were among the objects of

interest to Dr. Getulio de Moura, Vice-President of the Brazilian Railway Network, who earlier this week completed a brief visit to Britain arranged by the United Kingdom Railway Advisory Board. His tour included visits to builders of locomotives and rolling stock. British enterprise has played an important part in the construction and equipment of railways in Brazil, and British practice is followed on many lines in that country. This visit, one of several such by senior officers of overseas railways made under the auspices of U.K.R.A.S., should go far to strengthen the association in the railway sphere between the two countries. It is to be hoped that the Government is now fully seized of the importance of U.K.R.A.S. activities, from which both railways abroad and industry in this country derive benefit.

Closer Co-operation in Africa

MR. B. J. SCHOEMAN, the South African Minister of Transport, addressing the conference of General Managers of railways in Central and Southern Africa in Johannesburg recently, stated that South Africa attaches a great deal of importance to co-operation with the other countries of Africa and to maintaining contact with them. These countries, he said, were seeking solutions to similar technical, social, and political problems. The experience of one country could help another to solve some of these problems and it was for this reason that close co-operation should exist at all levels between the countries of Africa. In an earlier speech, Mr. D. H. C. du Plessis, General Manager, South African Railways, stated that the S.A.R. would not hesitate to place its experience at the disposal of the new states of Africa. "I am convinced that we have much to learn from one another and that together we can do a great deal to help the emergent states." "Progress towards an inter-connected railway system in Africa can be accomplished in harmony and these periodic conferences can make a valuable contribution towards that end."

Standardised Turnouts in the U.S.A.

AT its March, 1960, convention the American Railroad Engineering Association decided to standardise five basic turnouts for use throughout the North American Continent. Three are recommended for main-line track and two for yardwork. Considerable economies are expected to result from this policy. The main running-line turnouts are: No. 20 with 39-ft. curved switches recommended for high-speed traffic; No. 15 for medium speeds with 26-ft. curved switches; and No. 10 with 16-ft. 6-in. straight switches for low speed. The turnouts for shunting movements in yards are No. 8 with 16-ft. 6-in. straight switches and No. 6 with 11-ft. straight switches for normal use and for laying in congested areas respectively. The only one of the five extensively questioned in the discussion was No. 15 as opposed to No. 14 or No. 16. The reasons for its selection were because it is suitable for speeds up to 38 m.p.h. and the usual American practice is to allow 35 m.p.h. with medium-speed signal indications. Moreover many more No. 15s are already in use and can be standardised at lower cost. It may be noted that curved switches are considered more suitable for high speeds as giving better alignment and requiring less maintenance.

East London Line to the Kent Coast

CHEAP day return tickets to the Kent Coast are to be issued as an experimental measure this summer from five stations on the East London Line of the London Transport Underground. From next Monday they will be obtainable at Whitechapel, Shadwell, Wapping, Rotherhithe, and Surrey Docks daily, except Saturdays, until September 11. Excursionists will be able to travel to New Cross and change there into the Southern Region trains for Margate or Ramsgate between 10.37 a.m. and 3.37 p.m. The facility will save them having to re-book for the main-line journey, and avoids relatively long trips by Underground to and from the Southern Region terminus. How far it will result in further use of a peripheral Underground line out of business hours, remains to be seen. Much will depend on the convenience of the service *via* New Cross. A good many people who feel that trains may be crowded prefer to join at the terminus.

Motive Power in the North Eastern Region

THIS week we publish an article by Mr. F. H. Petty, Motive Power Superintendent of the North Eastern Region of British Railways, on the changing pattern of motive power in that Region. Mr. Petty points out that several factors have contributed to the many changes which have taken place in the motive power requirements and at motive power depots in the Region. These include the new regional boundaries, as well as changing methods of traction and altered train-working practice and the closure of branch lines. A further major contribution to the changes which have taken place has been the large-scale plan of modernisation and reconstruction of motive power depots which commenced nearly 10 years ago and which is now nearing completion. Broadly, the policy has been to close the smaller depots and concentrate power on one or two large units in each area with modern equipment and amenities. For diesel-power, the policy has been to concentrate on local passenger and shunting workings, following up with total dieselisation of sections of the main-line and large and relatively self-contained areas.

The Pennsylvania Railroad in 1959

THE report for 1959 of the Pennsylvania Railroad Company, of which Mr. James M. Symes is Chairman, shows that revenue from operations was $887,684,000, compared with $844,232,000 for 1958, gross income $915,598,000 ($885,831,000), expenses $908,331,000 ($882,287,000) and the return on investment 1·27 per cent (0·49 per cent). In the first quarter the company lost about $6,000,000, largely through storms and flood damage. The deficit was made good during the second quarter, and a profit of $6,000,000 was earned. This was eliminated in the third quarter by the 116-day steel strike, which cost the Pennsylvania about $65,000,000 in gross revenue. Resumption of work in the steel industry resulted in fairly good business at the end of the year. The company was burdened in 1959 by the higher cost of increased wages and added payroll taxes imposed by Government edict. As to the future, Mr. Symes believes that it is now increasingly realised how essential are railways in the national economy, and that investigations will show that railways must be accorded equality of treatment with their competitors as regards subsidy and regulation.

Passenger Deficit and Growth of "Piggy-back"

TO reduce the large deficit on its passenger traffic, the Pennsylvania Railroad, Mr. Symes states, will have to reduce the number of unprofitable passenger trains, increase charges "to meet inflation," and improve service and patronage in the densely populated areas, such as between New York and Washington. There is now, he believes, a "sympathetic understanding" in most metropolitan areas that while continuation of suburban passenger services is of value to these communities, the services cannot in most cases be made self-supporting, and that financial assistance by Federal, State, and local Governments will be required. "Piggy-back" traffic is growing rapidly, and will contribute more substantially to earnings. He hopes that there will be some relief from "featherbedding" practices in the railway industry. Regarding mergers with other railways, the report states that "logic dictates the ultimate consolidation of the nation's railroads into well-integrated systems. . . . Your management favours any soundly conceived step in this direction." The patterns which may result from proposed mergers are being studied, though "no specific mergers involving the Pennsylvania Railroad are under active consideration at the present time."

Trespassing Dangers

AS will be seen from our summary of Colonel W. P. Reed's report on the collision at Smedley Viaduct Signalbox, near Manchester, last October, the primary cause of the collision was tampering with signals by trespassers, probably children. The secondary cause was the failure of the Smedley Viaduct signalman to set the road properly ahead of the home signal when accepting the light engine involved in the collision. On the first point evidence showed that trespassing by

children in this area had been prevalent, and there had been some cases of wilful damage. This had been the first case of tampering with signal equipment. Co-operation between the British Transport Commission and City police forces had been good, but it was difficult to apprehend trespassers, and parents were by no means sympathetic when children were involved. Colonel Reed points out that the education authorities had responded well to requests that children should be warned against trespassing, but adds that the ultimate responsibility lies on parents. In fact, this accident calls attention, in its limited sphere, to a very wide and pressing social problem.

Retaining Experienced Signalmen

REGARDING the signalman's irregular working, Colonel Reed suggests that this man's promotion to relief signalman may have been rather too rapid. This raises another wide question: the difficulty experienced by British Railways in retaining men of the right kind for this responsible work in the face of competition from other industries. This problem, he states, is under close examination by the British Transport Commission. In effect this is one aspect of the broad questions dealt with in the report of the Guillebaud Committee and the result may well stand or fall by the outcome of the Guillebaud recommendations. For the rest, Colonel Reed discusses the question of adequate fencing of railways. He also points out that the signals involved in this accident are to be repositioned and modernised. But the kernel of his report lies in the problems of proper upbringing and disciplining of children, especially where their safety and that of others are concerned; and the question of the full and adequate staffing of the railways.

Inter-Governmental Transport Conference

THE European Conference of Ministers of Transport, of which the sixth annual report, covering the year 1959, was the subject of editorial comment in our May 6 issue, was created after the war of 1939-45. At that time, despite the existence of many international organisations concerned with railway and other forms of transport, such as the International Union of Railways (U.I.C.), and the creation of new bodies, such as the European Central Inland Transport Organisation (E.C.I.T.O.), several Governments felt that although each of these bodies could operate usefully within its own sphere, it was not always possible to reach in practice the solutions indicated at the international meetings.

As a result of a report presented by an international mission which, within the framework of the technical assistance of the Organisation for European Economic Co-operation visited the U.S.A. in 1952 to study the organisation of transport a conference was called, in 1953, on the recommendation of the Council of Europe. The objects were: to study the organisation and regulation of transport in Europe; to examine if this organisation were suited to afford full use of the existing transport systems and to assist their developments; and to formulate recommendations for that purpose. The conference recommended creation of a body consisting of the highest Government authorities in the field of transport, *i.e.* Ministers. This proposal was approved by the O.E.E.C. Council and by the Governments concerned, in October, 1953, when the European Conference of Ministers of Transport (E.C.M.T.) was instituted. Its objects were: to take measures suitable for the realisation, within a general or regional framework, of a better utilisation and more rational development of European surface transport of international importance; and to co-ordinate and promote the activity of the international organisations connected with transport.

The following 17 countries are members of E.C.M.T., the headquarters of which is in Paris: Austria, Belgium, Denmark, France, Germany, Great Britain, Greece, Italy, Jugoslavia, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and Turkey. With the unanimous approval of the Council any European State may belong to E.C.M.T., and the U.S.A. and Canada have the right to belong as associated members if they so request. The associated members may be represented by observers at meetings. Any member may withdraw from the Conference, giving six months' notice.

The E.C.M.T. is composed of the following: (a) the Council of Ministers, which meets at least once a year; (b) the Committee of Deputies, which prepares the work of the Council, deals with the items indicated by the latter, and informs the Council of action taken by the several countries on the conclusions of the Conference; and (c) the Secretariat. In the Council and Committee, members who have not given their approval to a motion are not obliged to apply it even although the majority of the other members may have approved it. Only decisions on procedure are taken by majority vote and are binding to all members. Regarding questions which are within the competence of Ministers, the latter must apply in their respective countries the measures decided. As to questions to be determined by Governments and Parliaments, Ministers must formulate the proposals with a view to adoption of appropriate measures in their own countries, where Governments and Parliaments are free to reject them. In all cases E.C.M.T. can transmit its conclusions to the international organisations, such as O.E.E.C., so that they may approve them. For the study of problems of particular interest for certain members, the latter may create "Restricted Groups" on the condition that they inform the Council. The other members may study the work of a Group but may not oppose it.

It is claimed for the E.C.M.T. that it is not a bureaucratic body. Apart from the Secretariat, of which the staff is small, it has no offices or permanent officials. Its activities do not overlap those of the international railway and other transport organisations, to which it applies for statistical and other information. Representatives of these bodies are invited to meetings of the Committee of Deputies and sub-committees, to express views and give advice.

As regards railways, the Conference took a prominent part in the creation of the Eurofima Company, which finances procurement of motive power and rolling stock for European railways. It has given an impulse to the rationalisation and modernisation of the railways, in requesting the support of Governments for the revision of the Europe convention on pooling wagons; underlining its concern for the U.I.C. studies on standardisation of rolling stock; recommending changes in motive power, including adoption of diesel traction and of a system of electrification applicable on several railways, and the reduction in the number of passenger classes from three to two, E.C.M.T. has concerned itself with the possibilities of collaboration between air and rail transport. At present it is examining the financial situation of the railways with a view to remedial measures. In dealing with each railway problem, E.C.M.T. is stated to have acted in full agreement with the U.I.C., which has always co-operated.

Successful Diesel Passenger Services

A DISTINCTION must be drawn, in considering the effects of introducing diesel passenger trains and railcars on British Railways, and indeed on any railway where road traffic is developed, between services which are capable of development, and those which can never be made to pay their way or must continue to incur heavy losses. The latter include many sections of British Railways where, apart from the growth of private motoring and of the use of motorcycles, the population is, and will remain, too sparse to engender traffic sufficient to support a reasonably remunerative service, even when operated economically by diesel railcar or railbus. This is made clear in the report of the Central Transport Consultative Committee, the subject of an editorial article in our May 20 issue. It is disappointing that the experiment of running a railbus between Buckingham and Banbury, in the London Midland Region, has been an economic failure. Nevertheless it showed the extent to which traffic could be recovered for the railway in the face of road competition on a completely uneconomic branch in a sparsely populated area. Receipts rose 500–600 per cent, operating costs were drastically cut, and the annual loss reduced from £14,000 to £4,700 a year. Reports on operation by railbuses of other branches are awaited. Where the population is comparatively sparse in Britain, it is use of private road transport, rather than the development of bus travel, which precludes the success of a railway passenger service As between train and bus, a great many people prefer the diesel train and railcar and the electric train to the bus. The railway's main disadvantage is the inconvenient location of some stations. By and large, train and bus services in this country work in together, though a

good deal more could be done to achieve better co-operation.

Where the traffic potential exists, the picture is very different. Substantial increases in passenger traffic have followed the introduction of diesel trains in almost every area where they have been tried. When, for example, diesel services were introduced between Crewe, Stoke, and Derby, in the London Midland Region, in September, 1957, by the year ended March 31, 1959, receipts had risen 60 per cent compared with the last period of steam operation, and the number of passengers increased by 42 per cent. In the Eastern Region between Yarmouth and Lowestoft, the number of passengers carried in the first full year after introduction of diesel units increased by 49 per cent and receipts by 51 per cent compared with the last similar period of steam working. Between Darlington and Saltburn, North Eastern Region, passenger journeys rose 28 per cent and receipts 40 per cent. One of the biggest increases recorded after the introduction of a new diesel train service in the same Region, between Leeds and Barnsley in March, 1958. On this route during the first full year of diesel operation, receipts rose by more than 400 per cent, and over 740,000 passengers were carried, an increase of 263 per cent. Also in the North Eastern Region, diesel trains were introduced between Newcastle and Middlesbrough in November, 1955, and both the number of passengers and the total receipts have increased annually. In the year ended October, 1955, when steam trains were in use, 3,318,035 passengers travelled on this route, and the receipts totalled £207,310. The annual increases since that time, compared with the last year of steam trains were:—

Year ended	*Passengers*	per cent	*Receipts*	per cent
October, 1956	+ 261,199	8	+ £53,068	26
October, 1957*	+ 717,369	22	+ £105,002	51
October, 1958	+ 383,744	12	+ £126,629	61

*Fuel oil rationing, national bus strike.

In the year ended October, 1959, the total number of passengers carried reached 3,705,189, an increase of 387,154 or 12 per cent, and receipts at £335,759, were £129,449 or 62 per cent higher than they were with steam trains.

Another section on which large increases took place with diesel working is from Birmingham to Lichfield, London Midland Region, where diesel working began early in 1956. In the first complete year of the new service, passengers increased by 162 per cent, receipts by 191 per cent; in the second year, passengers totalled over 238 per cent more than in the last comparable period under steam trains, and receipts were 269 per cent higher. Diesel trains have since been extended to almost the whole of the area surrounding Birmingham and Wolverhampton, in two separate spheres. One is the routes in the London Midland Region, and the other those in the Western Region. Under these two schemes diesel units have replaced steam trains on virtually all the local stopping services within the area centred upon Birmingham and Wolverhampton, and bounded in the Western Region, by Leamington, Stratford, Bewdley, and Wellington; and in the London Midland Region by Leamington Spa, Rugby, Nuneaton, Burton-on-Trent, Rugeley, and Stafford. The Western Region scheme was completed in June, 1957, and in the first year of diesel operation the number of passengers increased by 10 per cent, and receipts rose by 11 per cent. In the second year of working even more passengers were recorded and receipts increased by 16 per cent. In the London Midland Region area, where diesel trains were in full operation by the end of 1958, the number of passengers carried in the year ended December, 1959, represented an increase of about 8 per cent, and receipts one of 10.5 per cent, compared with the last year of steam working.

When diesel trains were introduced in the relatively highly populated Hampshire area of the Southern Region in September, 1957, the number of passengers increased so greatly that the original two-car diesel trains were converted into three-car units, and additional three-car trains had to be brought into use. The lines served by these trains are: Portsmouth-Southampton-Salisbury, Southampton-Alton, Southampton-Winchester *via* Eastleigh, and Portsmouth-Andover *via* Botley. In the first year of diesel operation the number of passengers rose by 32 per cent and receipts by 37 per cent. In the second year, to September, 1959, the total number of passengers rose to 45 per cent, and receipts to 50 per cent, more than they were with steam trains.

There were also large increases in passengers and receipts when diesel replaced steam trains in the Edinburgh suburban area of the Scottish Region. The first services to be converted were between Corstorphine and North Berwick, and Edinburgh Waverley and Galashiels *via* Peebles. On these lines passengers increased by 48 per cent, receipts by 80 per cent in the first year. Later in 1958, diesel trains were extended to services between Edinburgh Princes Street and Leith North; Corstorphine, Edinburgh, the Outer Circle line and Rosewell; and between Musselburgh, Edinburgh, and the Inner Circle line. Both the number of passengers and the total receipts increased on all these services, and the overall results of the first full year of operation showed a rise of 31 per cent in passenger journeys and of 58 per cent in receipts, compared with the last period of steam operation.

The Scottish Region placed in service its " inter-city " diesel train sets on fast schedules between Glasgow and Edinburgh in January, 1957. In the year ended December, 1957, passengers increased by 26 per cent, and receipts rose by 29 per cent. Further increases in passengers and receipts took place during 1958, and in the year ended December, 1959, the total number of passengers was 3,091,064, an increase of 42 per cent when compared with steam services, and the total receipts were 46 per cent higher at £487,156.

These results show that potentialities of diesel traction for services of several types, suburban, inter-urban and in rural areas, are great. Replacement of further steam passenger trains is continuing apace. Whether the services now being made, and to be made, over to diesel traction will prove as remunerative as those already selected, mainly because they seemed to offer the best possibilities, remains to be seen.

High-Strength Bolts in Railway Bridges

BRITISH engineers have always been in the forefront of design and construction of railway bridges. In modern bridgework two comparatively new techniques stand out, welding prefabricated units in workshops and their permanent fastening together in the field with high-strength bolts. The use of high-strength bolts for this purpose resulted from pioneer work carried out in the United Kingdom by Professor C. Batho, and though it was subsequently developed in the United States and other countries, it was early introduced on the Western Region of British Railways. The War Office also adopted the high-strength bolt for military bridges about 1952. The widespread practice nowadays of workshop welding is not considered suitable for field-erection, and this fact was largely responsible in the first place for high-strength field bolting as an alternative.

Because of his connection with the introduction and standardisation of high-strength bolting in the Western Region, it was appropriate that Mr. P. S. A. Berridge, Assistant Engineer, Bridges, in that Region, should be presenting a paper entitled, " The Use of High-Strength Bolts in Railway Girder Bridges," at the forthcoming meeting of the International Association of Bridge and Structural Engineering in Stockholm. The paper is mainly devoted to the technical details of this technique, but the following are a few of the more general matters discussed.

High-strength bolts in large clearance holes act as permanent shear connectors by virtue of the friction grip resulting from the clamping effect of tightening them sufficiently to prevent slipping between the parts being bolted together. As the bolts are in holes normally 1/16 in. larger than their own diameter and because the tension in them remains unaffected under increased shear loading on the joint, considerably greater fatigue resistance is secured as compared with riveted work. The bolts are tightened by either the torque co-efficient method, where the bolt tension does not exceed the yield point, or the part-torque part-turn method. The former method is generally with ordinary hand spanners until the bolts are well bedded down, when either a torque-measuring or a torque-limiting spanner is applied for final tightening. On the torque-measuring spanner the torque is read on a dial fitted to it at the moment the nut ceases to move after tightening. The torque-limiting spanner is adjusted so as to " collapse " (or fail to tighten further) at a prescribed torque. Pneumatic wrenches can also be used with similar means of control.

In the part-torque part-turn method with either hand or power wrenches the final tightening is effected by turning the nuts a precise amount worked out according to a formula. There are also several types of reactor bolt obviating the

necessity for separate torque reactor fittings. One of the most advanced is the Torshear bolt, tightened with a special wrench, and even in unskilled hands it can be relied upon to give a correct bolt-loading if properly prepared.

High-strength bolts may suitably be used to replace loose rivets in old bridges, as for instance to join transverse trough-flooring to main girders. In one such case where $\frac{7}{8}$-in. bolts were substituted for $\frac{7}{8}$-in. rivets in $\frac{15}{16}$-in. holes the bolts were found to have retained their original tensions when examined $3\frac{1}{2}$ years later. Similarly, it was found that high-strength bolts fitted to secure new lateral bracings between the bottom flanges of a 100-year-old main line bridge were still tight after five years of vibratory loading. In addition to the efficiency of this method of fastening, it is particularly valuable on bridges where line-occupations are limited and where time and supervision are at a premium. Moreover, so little skill is required to ensure correct tightening on site that labour costs are kept moderate.

Actually, there are two grades of bolt used for this work, both complying with B.S.S., the normal or R-quality bolt in the 45-55 tons per sq. in. ultimate range and the higher-strength or V-quality 65-75 tons per sq. in. ultimate range. The former is used in direct substitution for mild-steel rivets, and the latter for new work making better use of the technique of high-strength bolting. An illustration in the paper shows a 40 per cent reduction in the number of rivets required and a considerable reduction in the size of gusset if V-quality bolts are used as opposed to R-quality.

British Transport Commission Traffic Receipts

MINERAL traffic is the best feature of British Railways' freight receipts for Period 5, the four weeks ended May 22, though it was to be expected in view of higher steel production. At £3,891,000 mineral receipts compare with £3,952,000 for the four weeks to March 27. Period 4 (£3,662,000) must be discounted because it embraced the Easter holiday. The curve of mineral traffics seems to have flattened out, but the contrast with last year's figures is encouraging.

Railway merchandise receipts continue slightly above the corresponding totals for 1959, which is disappointing. One may hope that progress in improving methods of operating and of handling traffic, and of dispensing with unremunerative traffic, is reducing costs. The expected decline in coal class traffic continues. British Railways freight receipts for Period 5 were only £634,000 more than a year ago, and the increase for the first 20 weeks of the year is £2,244,000, which may indicate that improvement is accelerating. Receipts during Period 5 from road haulage, inland waterways freight, and ships' cargo were only £220,000 up on 1959.

	Four weeks to		Incr. or decr.	Aggregate for 20 weeks to		Incr. or decr.
	May 22, 1960	May 17, 1959		May 22, 1960	May 17, 1959	
	1960 £000	1959 £000	£000	1960 £000	1959 £000	£000
Passengers—						
British Railways ...	10,664	10,342	+ 322	49,472	46,405	+3,067
London Transport Road Passenger Services	4,458	4,338	+ 120	21,325	20,374	+ 951
Railways	2,022	1,834	+ 188	9,784	9,162	+ 622
Provincial & Scottish Buses	4,481	4,476	+ 5	21,196	20,812	+ 384
Ships	418	387	+ 31	1,493	1,508	− 15
Total Passengers	22,043	21,377	+ 666	103,270	98,261	+5,009
Freight, Parcels & Mails						
British Railways—						
*Merchandise & livestock ...	8,200	7,959	+ 241	39,620	38,324	+1,296
*Minerals	3,891	3,298	+ 593	19,286	17,138	+2,148
*Coal & coke ...	7,893	8,202	− 309	44,612	46,159	−1,547
*Parcels, etc., by coaching train ...	4,380	4,271	+ 109	20,681	20,334	+ 347
*Total freight, British Railways	24,364	23,730	+ 634	124,199	121,955	+2,244
Others†	4,632	4,412	+ 220	21,330	20,480	+ 850
Total freight, parcels & mails	28,996	28,142	+ 854	145,529	142,435	+3,094
Total	51,039	49,519	+1,520	248,799	240,696	+8,103

* Includes receipts from collection and delivery.
† Inland waterways freight, road haulage, and ships.

Alterations in passenger fares were too recent to make much difference to receipts for the period. Because of Easter, no true comparison is possible with the preceding four weeks. Weather affects excursions. Nevertheless, the increase of £322,000 in British Railways passenger traffics against the 1959 figure is small.

Higher passenger revenue might have been expected in view of the great efforts made to attract traffic by quoting cheap fares and of the many new diesel and electric services. The analysis of passenger receipts by Regions, when published, will be interesting.

The receipts of the provincial and Scottish bus undertakings of the British Transport Commission, only £5,000 more than the corresponding total for last year, may perhaps reflect the growth of private road transport. There was an encouraging rise in ships' passenger receipts, largely, it seems, in respect of the Continental services.

PERCENTAGE VARIATION 1960 COMPARED WITH 1959

	Four weeks to May 22	Sixteen weeks to May 22
British Railways :		
Passengers	+ 3·1	+ 6·6
Parcels	+ 2·5	+ 1·7
Merchandise & livestock	+ 3·0	+ 3·3
Minerals	+18·0	+12·5
Coal & coke	− 3·8	− 3·3
Total	+ 2·8	+ 3·2
Ships (passengers)	+ 8·0	− 1·0
British Road Services, Inland Waterways & Ships (cargo)	+ 5·0	+ 4·1
Road Passenger Services, Provincial & Scottish ...	—	+ 1·8
London Transport :		
Railways	+10·2	+ 6·8
Road Services	+ 2·7	+ 4·5
Aggregate	+ 3·1	+ 3·3

The Transport Tribunal in 1959

THE British Transport Commission Passenger Charges Scheme, 1958, was the principal matter dealt with by the Transport Tribunal in 1959. The scheme was submitted in draft on September 1, 1958. After preliminary hearings, the public inquiry before the Tribunal was resumed in February, 1959. It was rejected as drafted in May, because the Tribunal was not satisfied with the Commission's conception of a standard of season ticket charges to give reasonable flexibility. On May 8, 1959, the Tribunal caused to be circulated to the Commission and all objectors an interim decision. It requested the Commission to furnish a new scale of maximum season ticket rates and an estimate of the additional revenue which was likely to accrue from the adoption of such a scale. The Tribunal stated in its interim decision that it would take into consideration any representation in writing on any matter arising out of the interim decision.

In view of the suggestions contained in representations received it decided that they should be examined in public, and for this purpose the public inquiry was resumed on June 23. The draft scheme as altered by the Tribunal was confirmed by an Order dated July 8, 1959, and was entitled "The British Transport Commission (Passenger) Charges Scheme, 1959." The Order specified August 1, 1959, as the date on which the scheme would come into force. The scheme was the subject of editorial comment in our issue of June 26—August 14, 1959. The recent alterations in fares were made largely in accordance with the powers granted under the scheme.

On December 17, 1959, the Commission, in accordance with the Transport Acts of 1947 and 1953, lodged with the Tribunal four applications to confirm schemes for determining charges to be made by the Commission for port facilities at or in connection with B.T.C. harbours at Hull, Grimsby, Fleetwood, and Lowestoft. Further proceedings on these applications were pending at the end of the year, and hearings are continuing.

At the end of 1958, 38 appeals under Section 15 of the Road & Rail Traffic Act, 1933, from decisions of Licensing Authorities, were pending. Five of these were not prosecuted. During 1959, 73 new appeals were lodged, 13 of which were not prosecuted; 68 appeals were heard and/or determined. In 39 the appellants succeeded.

There was no change in the constitution or jurisdiction of the Tribunal during the year.

Gang System of Signal Maintenance

(*By a correspondent*)

THE gang system of signal maintenance has been in operation in the U.S.A. on the Richmond, Fredericksburg & Potomac Railroad for over four years, and a report of the good results obtained was given by the Signal Engineer to the Signal Section Convention of American Railroads held towards the end of last year. The gangs replace signal maintenance staff assigned to individual sections, and the area covered by each gang is about 35 miles in extent.

Each member of the gang has received general training in signal maintenance, but specialises. One member is concerned with adjustment of coded track circuits, another with that of carrier circuits, and so on. When a failure occurs, or repair is needed, the appropriate man is sent to carry out the work. Gangs are formed of the requisite number of specialists and do not move outside their own territories. Maintenance includes C.T.C., A.T.C., retarders in marshalling yards, level crossing warnings, and telephone and telegraph lines.

Advantages claimed for this system are availability of adequate forces for maintenance, and freedom from interruption of signal maintenance work by track maintenance, relaying and alterations to points and crossings; in the latter cases the foreman details men for the permanent way work, leaving the rest available for normal signal maintenance. If a man needs help for a particular job the gang foreman can arrange for one or several men to help him. With sectional maintenance, a man may have to wait several days before his colleague maintaining an adjacent section is free to assist him. Supervision, issuing of instructions, and training are improved, because the foreman can easily assemble his men at gang headquarters. The amount of tools and equipment, such as inspection trolleys, is reduced.

Inspection of the line on the R.F. & P.RR. is by four men working in pairs, a signal maintainer and a track inspector. Each pair has a motor trolley and inspects signal equipment on about 25 miles of line a day, and carries out such work as it is able to do. Defects which cannot be dealt with are reported to the gang foreman.

Most railways in the British Commonwealth use the sectional system for signal maintenance. On one of the major Indian railways with which the writer was associated for many years, maintenance staff for mechanical signalling were allotted sections embracing six to eight stations, according as the line was single or double. On four-track lines the sections were smaller. The electrical signal maintainers had a longer section, generally composed of four to six mechanical maintainers' sections. These units were built up into signal inspector's and assistant signal inspector's sub-districts with a Chief Signal Inspector in charge of the whole area, usually 450–650 miles in extent. The Chief Signal Inspectors had an office, stores, and district workshops consisting of blacksmiths, workshop fitters, painters, carpenters, tinmen, and so on. These could be formed into gangs for heavy maintenance work. Although separate maintainers are used for mechanical and electrical work, including telecommunications, all signal inspectors from the Chief Inspector downwards were in charge of mechanical and electrical signalling, telecommunications, and other signal and allied equipment. A large station yard with several large signalboxes or one power box, would form one section with one or two mechanical and electrical maintenance men in charge.

A very similar organisation is in use on the Victorian Railways though there is much sharper division between mechanical and electrical maintenance. Construction and workshop facilities are centralised; there are no district workshops.

The gang system of maintenance has not been adopted by British Railways though some trials are being made with combining of staff from several adjacent sections in districts where manpower shortage is acute. It is considered that this form of maintenance might be applied to country districts, but that it is not desirable on intensely worked main lines where rapid attention to failures is of prime importance. District gangs are used for major maintenance and renewal works.

LETTERS TO THE EDITOR

(*The Editor is not responsible for opinions of correspondents*)

Covering in Metropolitan and District Lines

June 3

SIR,—London Transport regrets that Mr. G. A. Allan was disturbed by the maintenance work carried out on the Circle Line near his home recently, as he stated in his letter published in your May 27 issue; but essential work of this kind can normally only be done in the small hours of the morning when rail traffic has ceased, and a certain amount of noise is unfortunately inevitable. The job is always completed as quickly as possible.

As to Mr. Allan's point about covering over railway cuttings for building, London Transport is well aware of the advantages of this and arranges with developers for this to be done wherever practicable; but there are difficulties. In the last six years more than 30 sites have been studied, but largely because of the high cost it has only been possible so far to develop four of them. As land in central London becomes scarcer, it is possible that rafting over the tracks may become a more attractive proposition.

Yours faithfully,

R. M. ROBBINS
Chief Public Relations Officer

55, Broadway, S.W.1

The Great Hall at Euston

May 30

SIR,—It is good when our weekly papers—outside the transport world—interest themselves in the Doric Arch and Great Hall at Euston; and better still when such an excellent periodical as *Country Life* can devote space to this subject.

To quote from this week's edition : " The recent announcement that the Great Hall and Board Room at Euston Station are to be demolished will have depressed not only railway enthusiasts but all lovers of fine buildings. The Hall and Board Room are among the noblest monuments of early Victorian architecture. The Great Hall is perhaps the one railway building that can compare with the grand railway halls of America and the Continent. It has a self-confident dignity, a richness and robustness of detail that the present age is certainly incapable of equalling. The Doric Arch is to be re-erected . . . and it is still not too late to consider the re-erection of the Great Hall in conjunction with it."

Many people hope that such a possibility will receive the most serious consideration of the British Transport Commission.

Yours faithfully,

J. P. BARDSLEY

Withdean, Brighton

Electric Working Through the Channel Tunnel

May 20

SIR,—In your May 27 issue, Mr. G. M. Barrett makes a statement which appears to be aimed at the Southern Region 750-V. d.c. electrification, namely "with the d.c. system a short circuit passing several thousand amps might persist for *some considerable time as it would not trip the breakers.*" The italics are mine.

In fairness to the manufacturers of the 750-V. d.c. high-speed circuit breakers installed in the Southern Region, the relevant trip time is of the order of 0·012 sec., which cannot be described as lengthy. The Southern Region engineers who plan the system take into consideration the need for a circuit breaker to trip for a short circuit occurring at a point where the resulting current is least, and your readers should be reassured on this.

Yours faithfully,

ALAN W. KNIGHT

48, Pewley Way, Guildford

THE SCRAP HEAP

Train Stops Play

A railway engine held up play between Gloucester and Leicester at Stroud. The engine, running along the top of the high embankment which borders one end of the ground, stopped in a position behind the bowler's arm. Play was stopped and signals were made by the players for the driver to move on, which he did.—*From "The Star."*

Ici On Parle Français

I have just returned from the Continent by the British Railways car ferry *Maid of Kent*, an excellent, comfortable ship. An advertisement for Britain, but for one thing: although quite a few passengers were Continental all the announcements over the loud-speaker about passports, etc., were in English, with the result that at least one French driver was delayed at disembarkation. Why in the name of courtesy and efficient tourism can't a recording of routine announcements in, say, French and German be broadcast in all ships and at ports ?—*From a letter to the "News Chronicle."*

Railway History at Croydon

The opening in July, 1801, of the first public railway sanctioned by Parliament, the Surrey Iron Railway from the Thames, at Wandsworth, to Croydon, is to be commemorated in the Croydon Pageant on June 15–25, to mark the completion of 1,000 years of Croydon's recorded history. Also re-enacted will be the opening in 1809 of the Croydon Canal, originally intended to extend to Portsmouth and unite the Thames with the Channel. It was bought out by the London & Croydon Railway, which in turn was amalgamated in 1846 with the London & Brighton Railway. A replica of an early London & Brighton locomotive will be featured in the pageant.

First Aid on the Railways (1859)

An instruction on the use of the tourniquet, issued by the Lancaster & Carlisle Railway in August, 1859, is reproduced in the May issue of the London Midland Region edition of *British Railways Magazine*. Illustrated directions are given on applying the tourniquet. It is stated that "All Guards, Brakesmen, Station Masters, and Persons in charge of any Junction or Siding, shall keep one of these Tourniquets in a convenient place for use at all times." Mr. P. Wright, Secretary of the Kendal Ambulance Class, discovered the century-old instruction.

Names for Diesel Locomotives

I refer to the . . . 2,000-h.p. diesel locomotive named *Empress of Britain* after the Canadian Pacific passenger liner. I heartily endorse the viewpoint of Mr. David Blee, General Manager of the London Midland Region, that it seems appropriate that these new diesels, on the Euston-Liverpool run, should be named after famous ships which sail from Liverpool. To give this an added boost and give British Railways a wider publicity angle would it not be a good idea if an identical and well-constructed model of each diesel engine, named after a famous ship, could be presented to the vessel concerned with full details of construction, speed attainable, date of entry into service, etc., for display in a prominent part of the liner ? Not only U.K. residents but also foreign visitors would have it drawn to their attention that something is at least being done by the British Transport Commission to provide the railways with more modern and better methods of travelling in this country.—*Mr. A. G. Burgess, in a letter to "The Financial Times."*

"Narrow-gauge" to Yeovil

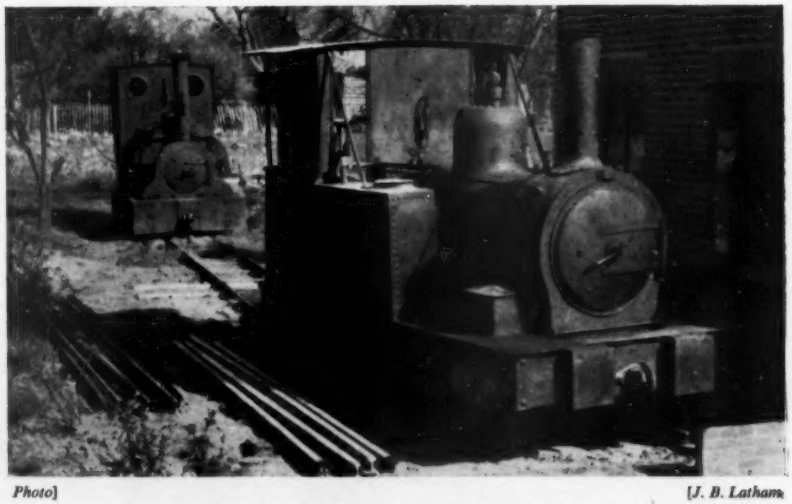
The Salisbury & Yeovil was yesterday (June 1) opened for passenger and goods traffic throughout to Yeovil. Trains run between Yeovil and London, *via* Salisbury and Basingstoke, and also between Yeovil and Southampton, Portsmouth, Manchester, and all stations on the South Western, *via* Salisbury and Bishopstoke, as well as between Yeovil and stations on the Brighton, *via* Havant or Portsmouth.—*From "The Railway Times," June* 2, 1860.

Locomotive Preserved in Private Grounds

Through the co-operation of the Dorking Lime Co. Ltd., of Betchworth, Surrey, Mr. J. B. Latham has secured for preservation one of its 3-ft. 2-in. gauge locomotives, *William Finlay*, a 0-4-0 tank built by Fletcher, Jennings & Company of Whitehaven in 1880. It was supplied new to Betchworth and used all its life in bringing chalk from the quarry in Box Hill to the works with its sister engine, *Townsend Hook*. Both had been in regular use until about two years ago. *William Finlay* is named after the founder of the works, who had been an engineer engaged in construction of the Manchester Sheffield & Lincolnshire Railway. Cylinders are 8 in. × 16 in. and driving wheels 2 ft. 4 in. dia. It has been little altered in its 80 years of life. Originally there were Salter spring-balance safety valves on the dome, but these were removed probably on re-boilering in 1922. The mechanical lubricator and the present injectors are also recent additions. It is hoped to run the locomotive in the grounds of Mr. Latham's house, which already contain the Peckett 0-6-0 saddle tank *Triassic*. Mr. Latham, a chartered quantity surveyor of Woking, is also Secretary of the Industrial Locomotive Society.

Railway Long Service Award for Mayor

The Guildhall at Hull was the scene of a probably unique occasion recently, when the Lord Mayor, Alderman L. Science, and Lady Mayoress saw the Lord Mayor Elect, Alderman W. E. Body, presented with a gold watch after completing 45 years' service with British Railways. The presentation was made by Mr. C. Hearnshaw, District Traffic Superintendent, Hull, N.E. Region, who said that this was the first time a British Railways Long Service Award had been presented in a Lord Mayor's parlour. For the past 27 years, Mr. Body, who is a District Inspector at Hull, has taken an active part in civic life. This now culminates in his election as Lord Mayor for the coming year. At a dinner arranged by the Lord Mayor for the presentation ceremony, and in the presence of his railway and civic colleagues, Alderman Body acknowledged "a debt to the railway management, who had always given staff every encouragement to take part in public activities." Mr. I. G. MacGregor, Area Traffic Manager (Hull & York), on behalf of the guests, thanked the Lord Mayor and Lady Mayoress for their generous hospitality.



Photo] [*J. B. Latham*

Fletcher, Jennings locomotive "William Finlay," acquired for preservation and running in private grounds at Woking

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

NEW ZEALAND

Improved Transit of Freight

Measures to improve the transit of merchandise on heavy traffic routes, and to reduce its cost, were outlined recently by Mr. Michael Moohan, the Minister of Railways. He said it was proposed that reduction of rates for large consignments of miscellaneous goods would be extended as a general principle wherever sufficient regular traffic was available and the consignors were prepared to accept certain additional responsibilities. This was known as the bulk tonnage system, in which adjusted or compensatory rates for rail transport of general merchandise would be available to large firms or forwarding agents who could guarantee satisfactory wagon loading and tonnage of goods each week between specified stations, would load and unload the goods, and would accept responsibility for loss and damage.

New Yard at Hastings

A new marshalling yard brought into use recently at Hastings has freed traffic flows on busy city thoroughfares. When all ancillary works are complete, it will also provide Hastings with much improved facilities for the handling of increasing goods traffic. Already, the longest trains can be accommodated clear of the main-line at Hastings, three at a time, if necessary. This in itself is simplifying train operations considerably. The small capacity of the present yard, hemmed in between Heretaunga Street and St. Aubyn Street, has for years been a hindrance to efficient train and station working.

Transfer of operations to the new yard took place on May 1, when a completely new signalling installation was brought into use. The automatic colour-light signals and power-operated points are arranged so that they may be incorporated in a C.T.C. system at a later date. The new goods yard is located about half a mile north of the present station. It comprises a crossing loop capable of accommodating a train more than 600 yd. in length clear of Frederick Street, and several other long sidings.

CANADA

C.N.R. Freight Sales Development

An initial step in the reorganisation of Canadian National Railways' Freight Traffic Department was announced recently by Mr. George R. Johnston, General Freight Traffic Manager. A new section, known as Freight Sales Development, has been established to carry out studies on rate-making techniques, equipment, and service to meet customer requirements. The Freight Sales Development branch will also have the responsibility for traffic forecasting and sales objectives and planning market surveys in consultation with the market research group already established in the C.N.R. Mr. John C. Gardiner, Assistant Freight Manager, has been appointed Manager of the new section, while Mr. William Hyman, Traffic Analyst, and Mr. R. Latimer, Traffic Research Officer, have been appointed Assistant Managers.

Road Trailers by Passenger Trains

The movement of trailers by rail has up to recently been confined to freight trains. To make the best possible use of all its services and facilities to provide its patrons with the fastest and most convenient service, the Canadian National Railways is now conveying piggyback traffic on regular passenger trains. By taking the trailers off the highway and carrying them on passenger or freight trains, regularity and dependability of service are increased.

UNITED STATES

New England Railways' Merger

The six New England railways, the Maine Central, Boston & Maine, Bangor & Aroostook, Rutland, New Haven, and Boston & Albany, have decided that their suggested merger is inadvisable at present and until such time as the earnings of New England carriers can be increased sufficiently to offset passenger deficits. Meanwhile recommendations of the White Report are being considered by the six administrations, notably those regarding running of freight trains through junctions without stops for classification, more efficient routing, complete abandonment of parallel railways, and the reduction of wagon daily charges.

Acquisition by Railways of Barge Line

The Illinois Central Railroad company and the Southern Pacific System filed an application in the latter part of December with the Interstate Commerce Commission for authority to acquire for $9 million the John I. Hay Company barge line, operating over more than 2,500 miles, principally on the Mississippi and Illinois rivers and the Gulf Intercoastal Waterway, from Milwaukee, Chicago, and Gary, Indiana, in the north to New Orleans, Houston and Brownsville, Texas, in the south. It is proposed to continue the barge line as a separate corporation, with the present operating management of the John I. Hay Company retained. The Illinois Central and the Southern Pacific would each own 50 per cent of the new corporation.

ITALY

Electrification Progress

Three sections at present are being electrified: Turin to Rho (Milan), Venice to Udine, and Alessandria to Sesto Calende and Laveno. It is hoped to start in the near future on conversion to 3,000 V. d.c. of the lines electrified some years ago at 3,700 V., three-phase, 16⅔ cycles, a.c., from Genoa Brignole to Alessandria and, eventually, from Alessandria to Turin and Modane, the Franco-Italian frontier station.

HUNGARY

Electric Trains for Argentina

Hungary is to supply 80 electric trains to Argentina under an agreement concluded with the Argentine State Railways. Delivery is to take place during the period 1960-63.

FRANCE

Movement of Heavy Loads

A 216-*tonne* petrol distillation plant absorber column, with an external diameter of 9 ft. and an overall length of 99 ft., claimed to be the heaviest indivisible load ever handled by rail, was recently moved from Arles to Lacq by the S.N.C.F. Loaded on two coupled special well-type wagons, equipped with pivoting cradles, and each mounted on two four-axle bogies, the column was specially moved, together with a flat wagon and a brake van, over the 360-mile route in less than 30 hr.

Draining of Foug Tunnel

In connection with the electrification of the Paris-Strasbourg line at 25kV. 50 cycles, it was necessary to increase the clearance in the Foug Tunnel, between the valleys of the Meuse and Moselle. To accomplish this, the masonry roof was cut back and the track lowered. A serious drainage problem arose from water seeping through the rock walls, which formed clayey mud on contact with the track bed. It was, therefore, decided to install a three-bed filter consisting of two layers of sand and a top layer of tarmacadam on which the ballasted track was laid. Every effort was made to make the tunnel arch watertight ; the outside was injected with high turbulent cement and the inside was sprayed with a protective coating. A central sump was installed to take away surplus water.

Catenary Observation Car

The S.N.C.F. has built a special vehicle for taking observations, and recording the main characteristics, of catenaries along electrified tracks. In addition to an observation cabin and a special compartment housing recording apparatus, the vehicle is equipped with a pantograph for taking various measurements.

The special pantograph enables a continuous recording to be made of the height of the contact wire while current is being fed to the catenary. Both horizontal and vertical movements are directly recorded on tracing paper, and a double potentiometer contact panel, located in one of the pantograph bearing bands, measures the stagger of the contact wire.

Signalling Improvements at Amersham, L.T.E.

New signalbox and revised track layout at future terminus of the Metropolitan line

Interior of Amersham Signalbox, showing signalman's console and illuminated diagram

NEW signalling and a revised track layout were brought into use by the London Transport Executive at Amersham, Metropolitan Line, on March 20. A new signalbox controls colour-light signals and power-operated points from a push-button console.

The work is part of the £9,000,000 scheme, including the provision of new rolling stock, for the electrification of the Metropolitan Line from Rickmansworth to Amersham and Chesham, and the four-tracking of the line from Harrow-on-the-Hill northwards to the junction with the Watford branch between Moor Park and Rickmansworth. Under this scheme, Amersham will become the new terminus of the Metropolitan Line. The station will eventually have three platforms instead of the present two and two 450-ft. reversing sidings at the country end of the station for use by London Transport trains.

Extent of Operation

The signalling at Amersham has been designed to deal with mixed suburban and main line traffic consisting of London Transport trains reversing at the station, British Railways stopping and express passenger trains, and freight trains. The goods yard will continue to be worked and provision has been made to isolate the yard working from the main signalling except when a train is entering or leaving the yard.

The new signalling is not in its final form, as a good deal of engineering work work still remains to be carried out at Amersham. The new reversing sidings, the third platform, and the loop for down freight trains, for example, are not yet complete.

Air-operated Interlocking Machine

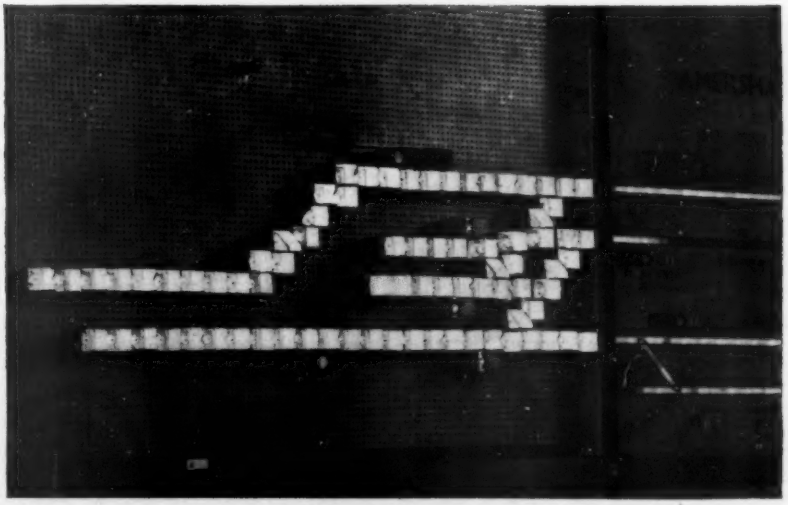
The former signalbox, containing a mechanical lever frame, has been replaced by a new signalbox which has been built on the down side of the station near the site of the old box. The new box has a control desk from which all points and signals in the area can be worked by power through an air-operated interlocking machine situated on the lower floor of the signalbox below the control room.

Track alterations included the bringing into use of a new trailing crossover between the northbound and southbound roads and a new facing crossover between the southbound main line and the goods yard. The former trailing crossover and slip connection to the goods yard have been taken out of commission and will be removed later.

Layout of Control Desk

The control desk in the signalbox has a double panel of push-button controls with the signalbox clock in the centre. The left-hand wing of the desk contains a panel of telephone keys and switches, and the right-hand wing a smaller group of telephone switches. The push-buttons are of the route-setting type and are self-restoring, so that only one operation is required for each train movement. The buttons are of clear plastics and are illuminated by coloured lights mounted below them.

The control buttons are red when routes are normal, changing to yellow when pressed to select a route. When the route is set and the appropriate signals are lowered to the yellow or double yellow aspect, the push-button changes from a steady to a flashing yellow light. When the signals are lowered to the green aspect, the push-button changes to green and stays green until the train has passed over the route set. The signals on the route are replaced to the normal aspect by the passage of the train and when all signals have been replaced the push-button is restored automatically to normal and changes from green to red. A second route can be pre-selected by pressing a second button, and the second



Section of illuminated diagram with face removed, showing egg-crate construction with box units mounted on perforated metal plate

route will then be set up as soon as the first route has cleared.

All shunt-signal movements are controlled on the route-setting principle by thumb switches instead of push-buttons, but they are illuminated in the same manner as the push-buttons. The thumb switches are not self-restoring and routes controlled by thumb switches cannot be pre-selected.

An illuminated diagram shows the Amersham area on the left and the Chalfont and Latimer area, which will be brought under the control of Amersham box at a later stage, on the right. For the time being, only the Amersham portion will be brought into use. The diagram itself is of a new type. In recent years Perspex blocks have been used for the illuminated sections of diagrams, but the Amersham diagram is of metal "egg-crate" construction, for which small standardised units have been developed. The box-like aluminium units can be built up on a perforated metal sheet to give any required diagram. The new type of construction, which has been developed and carried out in London Transport workshops, is relatively simple and is more economical than previous types.

Multiple-Aspect Signals

The new box controls 26 signals, including some three- and four-aspect (double yellow) signals to give indications of the type used by British Railways, and 22 pairs of points. Fog repeating signals of London Transport two-aspect short-range colour-light type are installed to show the indication of certain signals to drivers 400 ft. before the signal itself is reached. These fog repeating signals are a standard feature of London Transport signalling and are switched into use by the signalman when weather conditions require it. Platform repeating signals are installed on the northbound and southbound platforms at Amersham Station. Auxiliary red or yellow lights are fitted below certain signals and are illuminated in the event of failure of the lamp in either the main red or single yellow aspect to which they refer. In addition, the failure of a main red aspect causes the signal in rear to be maintained at danger.

Amersham Signalbox, showing exterior cladding of ribbed aluminium sheeting

A two-way switch in the signalbox can bring the goods yard under the control of the signalman or put it in the hands of the shunter as required. The yard has three main sidings running from the goods loop on the up side of the tracks. The points leading to these sidings must be set for the loop route before the yard is brought under the signalman's control and are then automatically locked.

For the present, block working between Amersham and Great Missenden will continue and block instruments and bells are installed for the purpose in the new Amersham box. The block working will be abolished later in the year. At a later stage, the signalling at Chalfont and Latimer Station will be worked by remote control from Amersham.

Design of Signalbox

The signalbox consists of two main elements, the relay room at track level and the control room above this to give the signalman a better view. The two sections are linked by a concrete pedestal and cantilevered platform, but the concrete access staircase is cantilevered away from the building, leaving the upper and lower storeys still visually separated.

The relay room has 14-in. solid brick walls and the flat roof is of pre-cast concrete beams finished in asphalt. The plinth and cantilevered floor deck for the control room are of reinforced *in situ* concrete. The spine framing for the staircase also was cast *in situ* but the treads were pre-cast.

The superstructure of the signalbox is framed in steelwork of normal design anchored to the concrete platform, and carries roof panels of asbestos decking units. These have been screeded with a lightweight foamed mix and finished with asphalt. Ceilings of ½-in. asbestos board are suspended from the roof decking, concealing all beams and services. The outer walls of the box have an inner skin of simple 4½-in. brickwork for stability and fire resistance, and an outer cladding of ribbed aluminium sheeting. A continuous membrane of ½-in. foamed plastic sheet is applied to the back of the cladding as a moisture barrier and to give thermal insulation. The trimmings to window and door openings are in purpose-made aluminium sections. All the aluminium was treated at the maker's works by the Aluchrome process to retard oxydisation.

The principal supplier of signalling equipment was the Westinghouse Brake & Signal Co. Ltd. The signalling at Amersham was designed and installed under the supervision of Mr. R. Dell, Signal Engineer, London Transport Executive, and has been carried out to the requirements of Mr. C. E. Dunton, Chief Civil Engineer, L.T.E.

The main contractor for the signalbox was Harry Chapples Limited, Beaconsfield, Bucks., and work was carried out under the direction of Mr. Thomas Bilbow, Architect, London Transport Executive, who was responsible for the design. The aluminium cladding was sub-contracted to the Boddy Roofing Company and the British Aluminium Co. Ltd.

BRITISH IRON AND STEEL OUTPUT.—Annual Report of the British Iron & Steel Federation for 1959 shows that pig iron production this year should reach a record level of about 16,000,000 tons; crude steel production should reach, and may pass, 24,000,000 tons, a record figure some 20 per cent higher than last year. The level of almost all finished products should increase considerably, with an especially substantial increase in steel sheet. The report adds that if consumers build up stocks on anything like the scale of the 1955-57 period, the industry may find itself hard put to meet all demands.

CONFERENCE ON ERGONOMICS IN INDUSTRY.—Ergonomics, the study of man in relation to his working environment, is the subject of a three-day conference being organised by the Department of Scientific & Industrial Research at the Connaught Rooms, Great Queen Street, London, W.C.2, on September 27-29. The object is to bring recent ergonomic research and industrial application to the notice of industrial managements, and to show where ergonomics fits in with the interests of production engineering, equipment design, work study training, and industrial health. Ergonomics is concerned with the improvement of industrial efficiency by ensuring that equipment is within the mental and physical capacities of normal people, taking into consideration factors such as the complexity of the job, noise, lighting, and temperature. Speakers at the conference will represent industrial concerns, medical services, the trade unions, and academic institutions. They will discuss the benefits to industry of a combined approach by anatomists, physiologists and psychologists, and engineers. Further details may be obtained from Miss. H. M. Clay, D.S.I.R., 14-18, Cornwall Terrace, Regent's Park, N.W.1.

SURI-TRANSMISSION FOR DIESEL LOCOMOTIVES.—New transmission for large diesel locomotives has been designed by Mr. M. M. Suri, Deputy Director (Diesels) in the Indian Railway Research, Design, & Standards Organisation at Simla. It is claimed to be superior to both electric and hydraulic transmissions. World commercial exploitation rights for the invention have been granted to Maschinenbau Kiel A.G. (M.a.K.) which is manufacturing the first seven prototype locomotives incorporating Suri-Transmission. These will be delivered for service in India later this year. Construction is stated to be lighter, simpler, and more compact than conventional transmissions, and both manufacturing and locomotive operating costs should be reduced.

DOWTY SEALS EXTENSION AT ASHCHURCH.—Dowty Seals Limited of Ashchurch, near Tewkesbury, manufacturers of precision seals and rubber and plastic mouldings for industry, have found it necessary, because of expansion of business since 1947, to undertake a major reconstruction programme. Work has already begun. A new factory will be completed early in 1961. Pre-fabricated steel sections and coloured panels will be used in construction. All manufacturing operations will be carried out on the same floor level. The new factory will be double-glazed to maintain equable temperature.

First Soviet Gas-Turbine Locomotive

140-*ton locomotive of* 3,500 *b.h.p. one half of twin unit for hauling* 3,000-*ton trains on the level*

THE first Soviet gas turbine locomotive is undergoing running-in and acceptance trials. Built by the Kolomna Locomotive Works the Co-Co unit, although capable of independent operation, represents one half of a 7,000-b.h.p. locomotive designed to handle 3,000-ton trains on the level at the maximum design speed of 100 km. per hour. The single unit weighs 140 tons, has 3-ft. 5⅜-in. wheels, and is capable of running through 820-ft. radius curves.

The locomotive body is divided into three parts. The front contains the acoustically insulated cab followed by the high-tension control cubicle. The driver is set rather well back, access from the outside being *via* a door terminating below window level. The central part houses the power plant and the rear contains the auxiliary diesel set, cooler heating boiler, motor ventilating blowers, brake compressor, starting fuel tank and the turbine compressor air intake.

No Heat Exchanger

The gas turbine runs on heavy (Masut) oil and is an open-cycle single-shaft unit without a heat exchanger. The nominal output at an ambient temperature of 15° C. and a pressure of 760 mm. Hg. is 3,500 h.p. at 8,500 r.p.m. The maximum gas temperature upstream of the turbine is 727° C. and the fuel consumption at maximum output is 327 gr. per h.p.-hr. The efficiency related to the turbine output shaft is 20·8 per cent. The twelve-stage axial-flow compressor has a throughput of 23·6 Kg. of air per sec. The four-stage turbine is connected to a welded gas collector housing which in turn is connected to the six combustion chambers fed from the compressor.

The rotor is made up from four discs and two end shafts expanding as cones towards the discs, and the whole suitably spigoted assembly is held together by a central bolt. The turbine rotor runs in roller bearings and is connected to the compressor by a splined shaft. Air cooling is used for the discs of the first three turbine stages.

Turbine Bearings

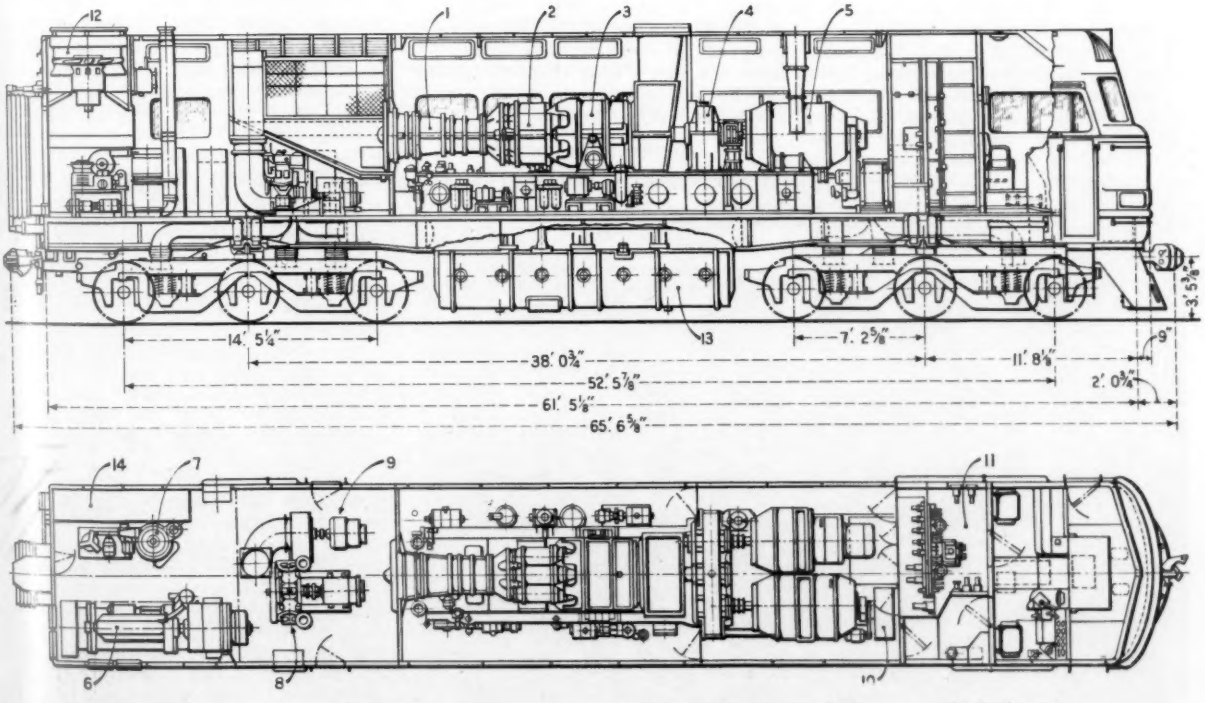
The front compressor bearing is of the normal supporting type and the rear one deals with axial and thrust loads. Air from the compressor enters the combustion chambers at 6 at. abs. at a temperature of 235° C. The velocity at the combustion zone is about 10 metres per sec.; this is reduced to 75 metres per sec. downstream of the combustion chambers, the efficiency of which is estimated at 96 per cent.

The fuel supply to each combustion chamber is by a centrifugal dual nozzle injector with mechanical atomisation. Starting is on light fuel with the aid of spark plugs provided in three of the six combustion chambers; ignition in the other three chambers is with the aid of cross-connecting ducts. Cooling of the combustion chambers and collecting chamber is with the aid of secondary air. To facilitate replacement the combustion chambers are bolted to the compressor housing with faced flanges; conical flanges and clamps are used at the turbine end.

The hydrodynamic turbine control circuit has a separate oil circuit the oil temperature of which is kept constant with the aid of a special regulator. The turbine temperature conditions are checked with the aid of thermocouples in the exhaust duct. Considerable care has been taken to ensure that the design of the power plant supports would prevent the transmission of distorting forces from the locomotive frame.

Three Traction Generators

The turbine drives three traction generators. Two are mounted in tandem and are driven from a common take-off and the third, driven by a separate take-off, is mounted in tandem with the auxiliary generator and the exciter. The



1 Compressor
2 Combustion chamber
3 Turbine
4 Reduction gear
5 Generator
6 Auxiliary diesel-generator set
7 Pre-heating boiler
8 Brake compressor
9 Cooling blower for rear bogie motors
10 Cooling blower for leading bogie motors
11 High tension cubicle
12 Cooling system
13 Turbine fuel tanks
14 Auxiliary generating set fuel tanks

Sectional elevation and plan of 3,500-*h.p. Soviet gas-turbine locomotive showing principal dimensions*

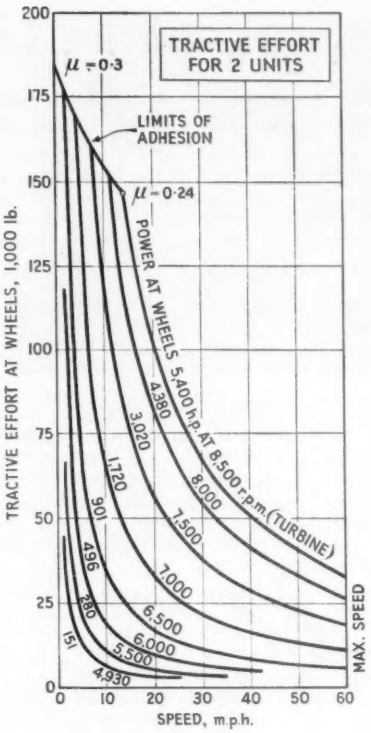
traction generators have eight main and eight auxiliary poles, each generator feeding two axle-hung series traction motors permanently connected in parallel. The motors develop 340 kW. at 545 V., 670 A. and 705 r.p.m. The motor field is automatically weakened at 35 and 55 per cent with the aid of relays.

The auxiliary generator is used to meet the internal power requirements of the locomotive as well as for charging the batteries. The exciter incorporates laterally split poles. The locomotive auxiliaries are driven by a 110-V. motor. The blower used to serve the traction motors of the leading bogie is mechanically driven off the shaft of the single traction dynamo assembly.

Diesel Power for Shunting

The turbine is not used when running the locomotive solo. For this purpose use is made of a six-cylinder 150-h.p. 1,500-r.p.m. diesel engine driving a shunting and auxiliary generator. The shunting generator develops 100 kW. at 230 V. and 434 A. for feeding two traction motors.

Contrary to earlier diesel locomotive practice in the U.S.S.R. the bogies are provided with a bolster suspension incorporating swing links and fully-elliptic springs along lines widely used in this country and elsewhere. Thus it would appear that the need for a secondary suspension has been recognised also as the result of more recent experience, as a means of improving the riding qualities of locomotives in terms of what is imposed on the crew, the locomotive equipment, and the permanent way. The dynamic implementation of the appreciation of the relevant factors is a logical step likely to be more beneficial than the adherence to the purely static and not widely valid ratios such as P (axleload)/D (wheel diameter) still seriously considered by some. The actual bogie design was described and illustrated in our February 27, 1959, issue.



Tractive effort curve for 7,000-h.p. twin-unit locomotive

New Marshalling Yard at Healey Mills

Diversion of River Calder to accommodate mechanised yard in the North Eastern Region

A NEW mechanised marshalling yard is being built at Healey Mills near Wakefield, British Railways, North Eastern Region, in replacement of 13 smaller yards. When finally in operation in two years' time, some 4,000 to 5,000 wagons will be sorted into trains at the yard each day.

The site of the yard was separated from existing rail installations by a loop of the River Calder. To accommodate the yard the river has been diverted to flow in a new ¾-mile channel, specially cut by bulldozers and earth scrapers during the last six months.

Electronic Equipment

The new yard, in addition to effecting substantial financial savings, will greatly improve freight transit times for West Riding manufacturers. It will embody electronic equipment, operations being directed by short wave radio from a central control tower overlooking a hump down which the wagons gravitate into sorting sidings. Electronic apparatus governing wheel retarders will slow down the wagons as they roll off the hump, and the points movements into the various sidings will be operated by push button controls.

Aerial view of marshalling yard site, showing, right centre, channel for diversion of river during excavation

Radio Network

A radio network, using a system of transmission that uses as its medium the magnetic field of an encircling loop of wire, will link the yard locomotives with the control tower. A talk-back loudspeaker system will link the control tower and the outside staff in all parts of the yard.

The control tower will incorporate a power-operated signalbox controlling points and signals over an area at present worked by six manual boxes. These manual boxes will be demolished later.

The preparation of the site will involve the use of 1,500,000 tons of filling material to make up the ground level. The next stage will be the construction of three bridges over the river, and the reconstruction of the road bridge taking Storrs Hill Road over the railway lines at Horbury.

The work is being carried out under the general direction of Mr. A. Dean, Chief Civil Engineer, North Eastern Region.

The Changing Pattern of Motive Power in the North Eastern Region

Modernisation and re-design of motive power depots throughout the Region will facilitate immediate change-over to diesel or electric traction

By F. H. Petty

Motive Power Superintendent, North Eastern Region

DURING the last 10 years many changes have taken place in motive power requirements and at motive power depots in the North Eastern Region. New Regional boundaries, changing methods of traction, closure of branch lines and altered train-working methods have all played a part in this. The ambitious programme of motive power depot modernisation and reconstruction embarked on early in the 1950's and now well on the way to completion has also had a big contribution to make.

This plan provided for the re-roofing, modernisation, and provision of improved facilities, including staff amenities, at the motive power depots at Heaton, Gateshead Greensfield, Hull Dairycoates, Hull Botanic Gardens, York, and Leeds Neville Hill. All these depots except Hull Botanic Gardens still deal mainly with steam locomotives, but have been designed for immediate change-over to diesel or electric traction when necessary.

Lavish Building in the Past

The North Eastern Railway built all the above motive power depots except Heaton on the traditional roundhouse pattern, and on a very lavish scale to modern eyes. For example, Hull Dairycoates, until it was brought up to date, consisted of six covered roundhouses with a separate repair shop. This depot is being altered to deal with diesel locomotives and the roundhouses have been reduced to two. Gateshead Greensfield, York, and Leeds Neville Hill depots, have been reduced from four covered roundhouses to two, and the chance has been taken at York to provide a new straight repair shop on the site of the redundant roundhouses. The lack of a separate repair shop for a depot at which some 214 locomotives are allocated has in the past caused a great deal of trouble.

Re-Roofing

The re-roofing of all the depots except Heaton follows the same pattern illustrated in the accompanying interior view of Gateshead Greensfield.

By far the biggest motive power scheme in the Region has been the building of the entirely new motive power depot at Thornaby. (See *The Railway Gazette* of August 8, 1958.) Here the facilities for both men and machines are very different from those usually found at motive power depots in the old days. Then, like Topsy, they just "growed." All the locomotives allocated to the Tees-side area use the new depot and this has enabled Newport, Middlesbrough, Stockton, and Haverton Hill depots to be closed. It is ideally placed, too, to deal with the traffic in the new marshalling yard now being built at Newport.

Since Gateshead Borough Gardens depot was closed, most of the work previously done there has gone to Gateshead Greensfield; Hull Dairycoates depot now undertakes all the steam working previously done by Hull Botanic Gardens and Hull Springhead, the latter depot having been closed except for the fuelling and maintenance of diesel shunting locomotives.

The Region has been in the forefront in converting its local passenger services from steam to diesel multiple units and has given priority to the modernisation of local passenger train services. At present, just over 700 diesel multiple-unit vehicles made up into train sets of two, three, and four vehicles are in service in the Region.

Completion this Year

The full plan, expected to be complete this year, calls for about 800 of these vehicles and a number of new depots has had to be built, and others converted to service and maintain them.

With the exception of the West Riding, with its very complex railway network (the result of old railway company interests) the scheme for the allocation and maintenance of these units calls for

Gateshead Greensfield motive power depot

Hull Botanic Gardens motive power depot

one major depot in each Traffic Manager's area. The following are the depots concerned:—

Tyneside Area

Diesel multiple units are allocated to and maintained at South Gosforth Car Sheds. These have been extended but still continue to be the Chief Mechanical & Electrical Engineer's depot for the servicing and maintenance of the Tyneside electrical multiple units.

Fuelling and day-to-day maintenance facilities are also provided in this area at Blaydon Motive Power depot.

Tees-side Area

A completely new depot for the maintenance and servicing of diesel multiple units has been provided beside the steam depot at Darlington, and together they form a single administrative unit. (See *The Railway Gazette* of September 27, 1957).

Fuelling and minor maintenance facilities are also provided in the carriage sidings at Middlesbrough Station.

York & Hull Area

The diesel multiple-unit depot is now Hull Botanic Gardens. This no longer deals with other types of units, and has been converted from a steam shed consisting of two roundhouses to a straight shed with five roads, three for maintenance and servicing of units in traffic, and two for units under repair.

The top illustration on this page shows the repair portion of the depot which follows the same pattern as similar facilities at other diesel multiple-unit depots in the Region.

West Riding Area

There is one major depot for diesel multiple units already operating at Bradford Hammerton Street, but it is being extended to cater for the additional vehicles now coming into service. Bradford Hammerton Street, which was the old Great Northern steam motive power depot for Bradford, now deals only with multiple units and diesel shunting locomotives, all the steam working having been transferred to the old L. & Y. depot at Low Moor.

Neville Hill

The largest multiple-unit depot in the Region, to be opened officially on June 17, is at Leeds Neville Hill, and ultimately it will provide for about 250 vehicles, working in the Leeds - Manchester, Leeds - Scarborough and other Leeds services. This new depot has been built beside the old but modernised steam depot, which will continue to operate steam locomotives for the present at any rate. Like Darlington, the depot will be a self-contained unit. Its diesel multiple-unit portion has a maintenance and servicing shed for units in traffic of three roads, with a repair shop of five roads, each capable of accommodating four vehicles. The illustration shows the repair shed in its final phase of construction.

There are few suitable rail connections between Bradford Exchange and Forster Square Stations, so fuelling and maintenance facilities have been provided to cater for the units working from Forster Square Station at the old Midland motive power depot at Manningham.

Many diesel multiple units are only stabled and not fuelled or maintained at outstations overnight, so that the following motive power depots have been closed, although they still remain as locations for train crews :—

Hexham
Middleton-in-Teesdale
Saltburn
Selby
Whitby
Bridlington
Ilkley
Starbeck (location for train crews now Harrogate)

Durham and Alston motive power depots have also been closed because of diesel multiple-unit working, but train crews are no longer employed there.

Motive power depots closed during the last 10 years because of altered train working, closure of branch lines, etc., include the following :—

Rothbury
Reedsmouth
Wearhead
Guisborough
Leyburn
Pately Bridge
Pickering

Reference has been made to the changes brought about by the new Regional boundaries, and the altered

Leeds Neville Hill diesel depot repair shed

working at Low Moor and Bradford Hammerton Street has been mentioned. The North Eastern Region motive power depot at Cudworth was also closed, and its work transferred to the adjacent former L.M.R. depot at Royston.

Future Amalgamations

Further amalgamations of this sort are probable, but depend largely on the development of train operating schemes such as the amalgamation of the Leeds stations. It has not been overlooked that in or near the city of Leeds there are the following motive power depots :—

Copley Hill ...	former G.N.R. depot
Farnley ...	former L.N.W.R. depot
Stourton and Holbeck	former Midland Railway depots
Neville Hill ...	former N.E.R. depot

While reference has so far been made only to diesel multiple units (the first priority), there are now over 190 diesel shunting locomotives working in the Region, and a further 110 are to be delivered by the end of this year. These are expected ultimately to fulfil all the shunting requirements of the Region, and replace all steam shunting locomotives.

To provide for the maintenance of diesel shunting locomotives, special and separate accommodation has been made at the following motive power depots, where fuelling facilities are also available :—

Percy Main
West Hartlepool
Thornaby
York
Hull Springhead
Royston
Bradford Hammerton Street
Leeds Neville Hill

Lastly, while it was decided that the correct policy was to concentrate primarily on the dieselisation of local passenger and shunting workings, plans for large-scale dieselisation of the main lines have been developed. By the end of 1960, some 90 locomotives of the main-line types will probably have been delivered ; some are already coming forward. Most of these are intended for the Newcastle and York Districts and will be maintained at Gateshead Greensfield and York depots. A self-contained maintenance shop is being built at Gateshead Greensfield with floors at three levels under the new roof. The locomotives allocated to York will be maintained in the new repair shop already mentioned.

It is expected that the provision of these main-line locomotives will enable the remaining express passenger and freight trains between Newcastle and Edinburgh, and a growing number of similar trains between York and Newcastle, to be diesel-hauled.

The trains referred to are those which will not be provided for when the scheme for working more of the important East Coast passenger trains by English Electric 3,300-h.p. "Deltics" now on order has been implemented.

The next development planned is the dieselisation of the whole of the train working in the Tees-side area based on Thornaby motive power depot and the new Newport marshalling yard. With this object in view, the whole of the main-line, mineral, and freight train working in the area is being recast to provide the best possible services for this great industrial area.

The Region's change-over from steam to diesel traction is perhaps best illustrated by the diagram.

To sum up : the regional motive power policy has been to close the smaller and outlying depots, although train working staff may remain at the location, and concentrate motive power units at one or two large depots in each area with up-to-date equipment and amenities.

The policy for dieselisation in the Region has been to concentrate on local passenger and shunting workings, following up with total dieselisation of certain sections of the main line and large and more or less self-contained areas.

Much has already been done to put these policies into successful practice, but similar work remains.

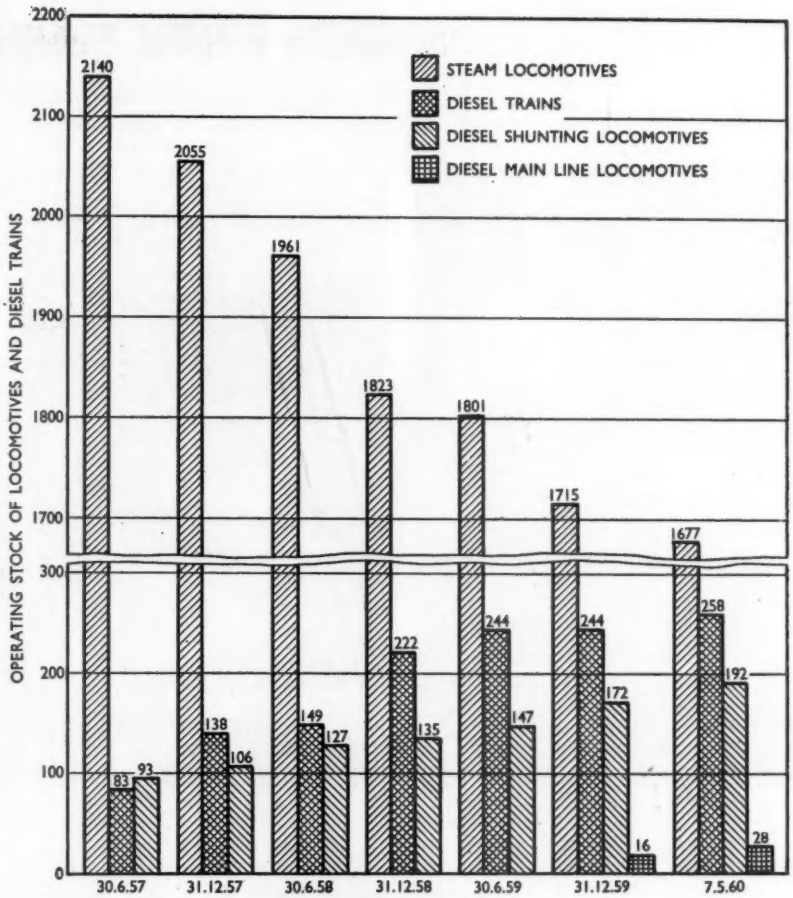


Diagram showing progress of change-over of traction from steam to diesel in the North Eastern Region

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SCOTTISH MOVEMENT CONTROL REGIMENT.—No. 6 Movement Control Group, Royal Engineers, a Scottish unit of the Army Emergency Reserve, has been reorganised on a regimental basis and now forms the nucleus of the 75th (Scottish) Movement Control Regiment, R.E. (A.E.R.). No. 6 Group last year recruited its complement of volunteers and, but for the change, would have had to close its doors to further recruits. The regiment is seeking clerks, especially with an interest in transport or goods handling problems or a wide knowledge of army organisation. Previous service in the armed forces is desirable, but not essential, and any men interested, aged 17½ to 50, are invited to apply. There are also vacancies for officers for the new 192 (Highland) and 193 (Lowland) Squadrons which form part of the Regiment and ex-officers and officers on non-active reserve lists of any of the Services or members or ex-members of O.T.C. or Cadet Force units who have Certificate "B" or Certificate "A," Parts I and II, are invited to communicate with the Commanding Officer. Correspondence should be addressed to Lt.-Colonel John Young, R.E. (A.E.R.), Officer Commanding, 75 Movement Control Regiment, R.E. (A.E.R.), 1 Rosslyn Crescent, Edinburgh, 6.

RAILWAY BENEVOLENT INSTITUTION.—At a meeting on May 23, the Board of the Railway Benevolent Institution granted annuities to three widows involving an additional liability of £82 10s. per annum. Ninety-eight gratuities were also granted amounting to £945 to meet cases of immediate necessity.

Southern Region Publicity

Attractive new posters advertise seaside resorts in Southern England and the Channel Islands

Three double-royal posters issued by the Southern Region, depicting typical coastal scenery in the South of England

THE three double-royal posters reproduced above are a new series issued by the Public Relations & Publicity Office of the Southern Region of British Railways to advertise the varying coastline of Southern England. While they are not intended to depict any one particular spot they are typical of that stretch of the coast.

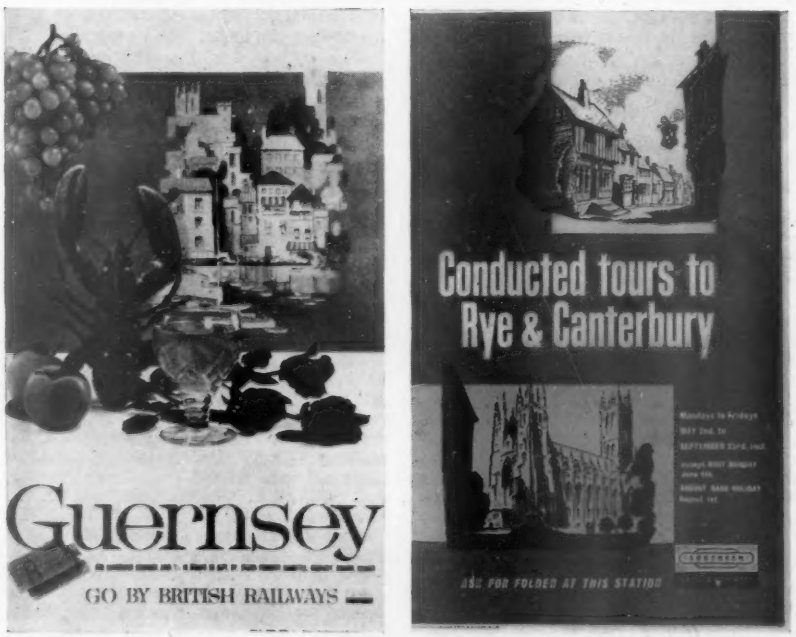
Two of them were painted by Professor Walter Langhammer, and a third by an eminent French artist, Brenet. The series has been specially produced for display in all Regions of British Railways and 5,000 copies of each have been printed.

The centre poster, illustrating the rugged Atlantic coast, was printed chromo-litho in 11 colours, by Haycock Press Limited. The poster on the right, showing the white cliffs of the Dorset coast, was printed photo-litho in eight colours by E. J. Day & Co. Ltd. The third portrays the pine-wooded coast of Hampshire and has been printed by Waterlow & Sons Ltd., chromo-litho in 12 colours.

The resort poster for Guernsey is a combination of colour photography by Howard Symmons, F.R.P.S., with artwork by Laurence Fish for the background.

Lettering has been carefully chosen to suit the mood of the subject. Reproduced from a 15 in. x 8 in. transparency, 2,000 copies were printed photo-litho in eight colours, by Gilbert Whitehead & Co. Ltd.

The Canterbury silk-screen poster is based on the cover design of the folder by R. Lander advertising conducted tours to Canterbury and Rye. It was printed by Hegerty & Merry in four bold colours.



Combination (left) of colour photography with art work; (right) silk-screen poster in four bold colours

Southampton-Havre Service Featured

A double-royal poster "Overnight to the Continent" (not reproduced) draws attention to the comfortable night service via Southampton-Havre. The dramatic painting by Bob Johnson is of ss. *Normannia* travelling up the Solent. The reproduction is in 12 colours chromo-litho by Chromoworks Limited.

RAILWAY NEWS SECTION

PERSONAL

Mr. C. D. James has been appointed Manager, Department of Colonisation & Agriculture, Canadian National Railways.

Mr. W. Galloway, Assistant Chief of Police, Midland Police Area, has been appointed Chief of Police, Western Police Area, British Transport Commission, in place of Mr. W. W. Wood, whose retirement was recorded in our June 3 issue.

Mr. T. S. Arnott, Stationmaster, Edinburgh Waverley, Scottish Region, British Railways, will be retiring on July 6.

Mr. C. E. T. Cridland has been appointed Chairman of the Transport Users' Consultative Committee for the West Midland Area. He succeeds Major C. R. Dibben.

Mr. J. H. Williams, Equipment Engineer (Road Services), London Transport, is retiring on July 9.

Mr. G. W. Thompson has been appointed Exhibition Manager, Firth Cleveland Group of Companies.

Mr. Klaas van Walraven has been appointed Sales Supervisor for Holland, Wolf Electric Tools Limited.

Mr. P. G. James, Chief Financial Officer, London Transport Executive, who, as recorded in our May 27 issue, has been appointed Chief Accountant, British Transport

Mr. F. R. Stockdill
Appointed Assistant General Manager, London Midland Region

Mr. P. G. James
Appointed Chief Accountant, B.T.C.

Mr. F. R. Stockdill, Chief General Accountant, Finance Department, British Transport Commission, who, as recorded in our May 27 issue, has been appointed Assistant General Manager, London Midland Region, British Railways, joined the London & South Western Railway in 1921, and, after three years in the Locomotive Department, was transferred to the Chief Accountant's Office of the newly-formed Southern Railway. In December, 1940, he was seconded to the Transportation Accounts branch of the Ministry of Supply, and on release from the Ministry in 1943 was appointed Special Assistant to the Chief Accountant, Southern Railway, becoming Assistant Accountant in 1946. Two years later he became Accountant, Southern Region, British Railways. Mr. Stockdill was appointed Accountant, Western Region, British Railways, in September, 1953. In 1957 he was appointed Chief General Accountant, Finance Department, British Transport Commission, the post he now relinquishes.

Mr. W. J. Argent has been appointed a member of the board and Managing Director of Mercedes-Benz (Great Britain) Limited.

Mr. Arthur Whiteley, Assistant Managing Director, Massey-Ferguson (Export), Ltd., retires from the company on June 10. He will take up a number of consultant appointments.

Mr. J. L. Orme has been appointed Deputy Chief Engineer, London, Eastern & Southern Areas, General Electric Co. Ltd. He was Chief Assistant to the Manager of Central Stations Department.

Mr. John C. Gardiner, Assistant Freight Manager, Canadian National Railways, has been appointed Manager of the newly-established Freight Sales Development Section. Mr. W. Hyman, Traffic Analyst, and Mr. R. Latimer, Traffic Research Officer, have been appointed Assistant Managers. Reference to the new Section is made on page 680.

Commission, is a Chartered Accountant and 55 years of age. Mr. James entered the service of the London Passenger Transport Board in 1935 as an Administrative Assistant to the Comptroller & Accountant. In 1939 he was appointed to the Officer grade as Assistant to the Chief Accountant. In May 1940 he became Accounts Officer and in 1945 Accountant. In November 1947 he was promoted to Chief Accountant, being redesignated as Chief Financial Officer, London Transport Executive, in October 1950. As Chief Accountant, Mr. James has general responsibility for accounting, costing, and auditing matters.

Mr. H. E. Osborne was the Chief Accountant & Financial Adviser, and is now redesignated Financial Adviser.

Mr. Alan Havard has been appointed Public Relations Officer, British Road Federation, in succession to Mr. Allan White, who has taken up an appointment with the Taylor Woodrow Group.

Mr. R. M. Atkinson has retired from the position of Managing Director of Sulzer Bros. (London) Ltd., and of Hathorn, Davey & Co. Ltd., and has been appointed Chairman of the Boards of both companies. Mr. E. H. Stagg, Mr. G. W. Heslett, and Mr. M. W. Zublin have been appointed Joint Managing Directors of both companies.

We regret to record the death on June 3 of Mr. S. B. Taylor, Chief Secretary, British Transport Commission, who entered the service of the Great Western Railway in 1915, and became Acting Secretary of the Company in 1947. From December 1, 1947, he held the position of Deputy Secretary of the British Transport Commission until July 1, 1951, when he was appointed Chief Secretary. Mr. Taylor was a Bachelor of Commerce of the University of London, and, in 1928, was awarded the Sir Ernest Cassel travelling scholarship by the University. This enabled him to study for one year at Columbia University, New York City, and later, by extensive travel in Canada and the United States, to gain wide experience of the transport and business methods of that continent. Mr. Taylor became an Associate of the Chartered Institute of Secretaries in 1926, and a Fellow in 1942. He was a member of the Council of that Institute. He was connected with the Institute of Transport from 1933, and became its Honorary Treasurer. He was appointed Chief Secretary, British Transport Commission, in December, 1954.

Lord Nelson of Stafford, Sir Archibald Forbes and Sir John Woods have retired from the Board of The English Electric Co. Ltd.

Mr. F. Bastow has been appointed Managing Director of Dowty Seals Limited. Mr. C. F. Porter and Mr. K. G. Ware have been appointed to the board of Dowty Mining Equipment Limited. Mr. C. N. King has been appointed to the board of Dowty Hydraulic Units Limited.

L.M.R. Appointments

London Midland Region, British Railways, announces the following appointments:

Mr. W. Middleton as Works Maintenance Assistant, Chief Civil Engineer's Department, Euston.

Mr. W. C. Clenshaw as Assistant (Design), Chief Civil Engineer's Department, Euston.

Mr. W. P. Gibson as Public Relations Officer, Divisional Traffic Manager's Office (also Western Region), Birmingham.

Mr. J. F. H. R. Hastings-Stroud as Public Relations Officer, Nottingham Divisional Traffic Manager's Office.

Mr. V. G. A. Pottow as Assistant District Goods Manager, Birmingham (located Wolverhampton).

Mr. M. C. B. Johns as Assistant District Engineer, Manchester.

Mr. W. N. Thom as Assistant District Engineer, Derby (South).

Mr. R. B. Burbidge as Assistant (Land Surveys), Estate & Rating Department, Euston.

Mr. G. H. Griffith as Assistant Electric Traction Engineer, C.M. & E.E. Department, Birmingham (temporarily located at Wednesbury).

Mr. J. H. Capstick as Assistant District Operating Superintendent, Preston.

Mr. L. W. Taylor as Assistant District Motive Power Superintendent, Derby.

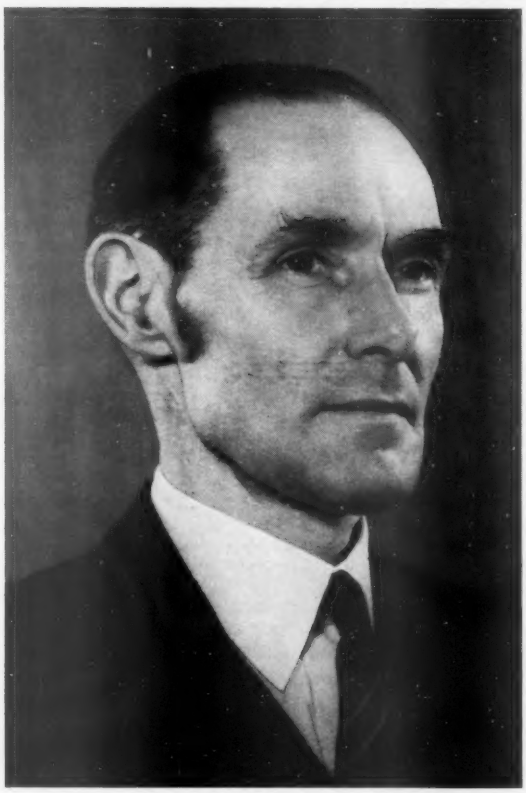
Mr. J. T. Hillier as Assistant Works Manager, Gorton.

Lt.-Col G. W. Kirkland has been elected president of the Institution of Structural Engineers for the session 1960-61, with effect from October.

Mr. Lionel G. Stockwell, Managing Director of Hernu, Peron & Stockwell Limited, has retired after 47 years with the company.

Mr. Pierre Delagrave, M.B.E. (Military), Special Assistant to the Vice-President of Traffic, Canadian National Railways, who, as recorded in our May 27 issue, has been appointed General Passenger Traffic Manager for the system, succeeds the late Mr. J. T. Whiteford. Mr. Delagrave was born and educated in Quebec City, served in the Royal Canadian Air Force in Canada, the United Kingdom, Africa, India, and the Middle and Near-East, holding the rank of Squadron Leader during the 1939-45 war. From 1945 on he held senior management positions in the public service at Ottawa and in the early 1950's went to Geneva, as a senior official of the International Refugee Organisation which later became the Intergovernmental Committee for European Migration. In this capacity he arranged mass transportation in one of the world's greatest migration and movement projects. He has served the Canadian National Railways successively as Special Assistant to the Vice-President & Secretary and as Special Assistant to the Vice-President of Traffic before assuming his present appointment.

Mr. W. I. Nielson, Chief Accountant, Lumenated Ceilings Limited, a member of the Hall-Thermotank group, has been appointed Secretary of the company. He succeeds Mr. H. R. Heaven.



The Late Mr. S. B. Taylor
Chief Secretary to the British Transport Commission, 1954-60

Mr. Pierre Delagrave
Appointed General Passenger Traffic Manager, Canadian National Railways

NEW EQUIPMENT AND PROCESSES

Excavator

THE J.C.B.4 excavator supersedes the Hydra-Digga/Loadall, has far larger bucket capacities, a great power output, and a new cab combined with complete re-styling of the power unit cowling.

Great power availability is derived initially from a new vane pump with an output of 30 gal. per min. at 1,650 lb. per sq. in. and large-section standardised rams throughout the machine. Spares are easily carried as six types of hydraulic-ram seal only and one size of ram are used throughout the whole of the machine, and the pump is fitted with a replaceable motor cartridge.

The twin-ram alloy-steel slewing gear is hydraulically-cushioned. The cab is fitted with upholstered seats to the digging and driving positions and has a capacity of 160 cu. ft. It can provide site-to-site transport for five persons, including the driver. The large size of cab additionally permits its use as an office when the machine is on site.

The hydraulic system has been standardised as far as possible with the result that only three different sizes of digger hose are required. Bucket sizes have been increased by approximately 30 per cent. A multi-purpose bucket performs three functions, back-acter, face shovel, and square-holer. When used as a back-acter or square-holer, no change is required; when used as a face shovel, a separate set of pivot bushes only are required.

Full lighting may be fitted to the machine to provide trafficators, normal road lighting, and floodlighting in either direction.

An "A"-frame with multi-position stabilisers ensures that the machine can be positioned over undulating or sloping ground to provide a trench with vertical sides independent of whether the ground level is on a horizontal plane or not. The frame is 16 ft. wide to eliminate risk of cave-in. In the raised position, the frame provides 21 inches ground clearance.

Leverage is approximately 2.5:1. A power-matched loader provides great stability under all working conditions.

The front axle has a certified rating of 70 tons, a rating unlikely to be required in service and one more than able to cope with any working stresses put on it.

The chassis contains 45 gal. of hydraulic oil, and no auxiliary fan cooling is required. The filter incorporates a filtration area of 4,800 sq. in.

A wide range of equipments are available for the machine. These range from 8-in. taper ejector buckets for land drainage up to 6 ft., skimming buckets holding one cu. yd. of earth, and there are other equipments for special applications. Square holes can be dug with any of the buckets.

Power is by a Fordon Major 52 h.p. engine.

Further details can be obtained from the manufacturer, J. C. Bamford (Excavators) Limited, Lakeside, Rocester, Staffs.

Anti-Corrosive Coatings

THE Pitaguard system provides high-duty protection of iron and steel against corrosion. It is claimed to be far more durable than red lead/alkyd systems, and to possess corrosion resistance of a much higher order.

On iron and steelwork, the primer seals the surfaces from electro-chemical activity—one of the main causes of corrosion. It tends to absorb corrosion products present on the surface and, to some extent, to reduce them. Because of this, traces of firmly adherent rust will have no deleterious effect on its performance. Good flow-out properties eliminate the danger of corrosive attack at the area of low film thickness occasioned by bad brushmarks and poor levelling.

The finisher is available in a wide range of attractive shades. It has a good gloss on smooth, even surfaces, and retains this appearance on uneven surfaces.

Further details can be obtained from the manufacturer, Allweather Paints Limited, 36, Great Queen Street, London, W.C.2.

Inexpensive Computer

PRICED at £4,750, a new specialised computor which can record up to 50 million items under 5,000 different headings, is of little greater size than a chief executive's desk.

Initiation of all records is done through a specially-adapted electric typewriter also available for typing all associated information on documents such as advice notes, invoices, and works issuing dockets.

Operation is simple. By pressing the initiation tab and the plus or minus tab followed by the catalogue number, the recording drum is prepared for the acceptance of the quantity of articles to be added or subtracted. Manipulation of the following keys records their number.

Rows of illuminated digits show the quantity of goods being handled and the number of items in stock before the new movement is recorded.

The new stock position is then calculated and the electric typewriter gives a typed record of these figures.

One instance of the computer's use is a situation in which several branches are continuously telephoning in situation reports. The computer would provide a means of instant record and immediate report, on any of the " services " for which they act.

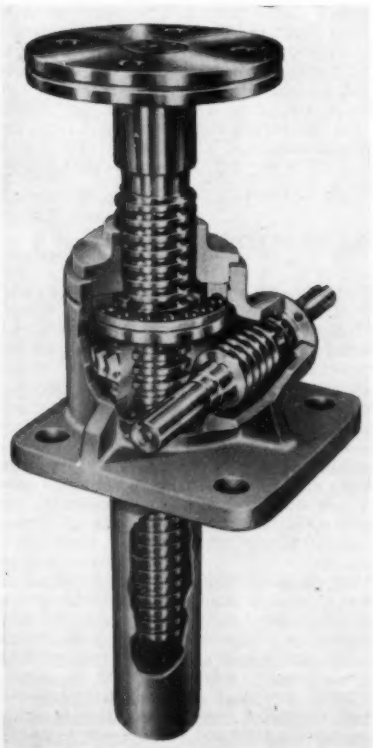
Further details can be obtained from the manufacturer, the Electronic Machine Co. Ltd., Mayday Road, Thornton Heath, Surrey.

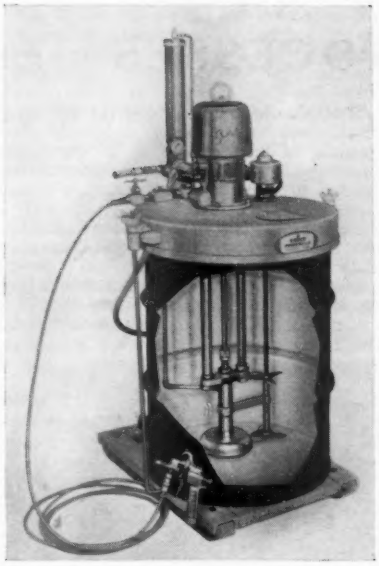
Worm Gear Jacks

THE Duff Norton 1800 series is a new standard range of worm gear jacks which comprises eight units with capacities of from 2 to 100 tons. It has been specifically designed for building into machinery and equipment where jacking duties are involved.

Mechanical in operation, the jacks can be connected by shafting and mitre gearboxes to lift in unison, even where the load is unevenly distributed. They are self-locking and can be used to hold loads of several hundred tons in position indefinitely without creep.

Features common to all the jacks include the use of heat-treated phosphor-bronze worm-gear teeth, the use of Alemite grease nipples and the absence of keying in the lifting screw. This factor allows the top to be bolted to the member being raised, an action which prevents the jack from turning. A clockwise rotation is used to lift the load,





the maximum worm-gear speed being 500 r.p.m. In the smallest and two largest jacks a ball-race and grease seal is fitted at each end of the worm, while for jacks of from 5 tons to 25 tons capacity, Timken taper bearings are used for this duty.

The closed height of the range lies between 5¼ in. for the 2-ton model and 24 in. for the 100-ton unit. Base measurements increase in eight stages according to the size of the model from 3½ in. by 7 in. for the smallest jack to 20¾ in. by 24½ in. for the largest unit. Weights, based on a 6-in. lift lie between 17 and 1,200 lb., the extra weight of each additional 1 in. of lift in these sizes being 0.33 lb. and 9 lb. While the standard range can be supplied with lifts of up to 24 in., greater lifts can be supplied where required.

Apart from their use as lifting jacks, the units can be used as linear actuators to push or pull horizontally and to apply pressure in any direction. They can be either manually or motor-operated and, as all have a common lifting speed, any combination of sizes can be used together, operated through gearboxes and shafting from a common power source.

Further details can be obtained from the manufacturer, the Consolidated Pneumatic Tool Co. Ltd., 232, Dawes Road, London, S.W.6.

Stationary Hydra-Spray

THE 226-066 stationary hydra-spray, part of the Graco range of equipment, now is being distributed under sole agency in this country. It operates direct from 44-gal. open-top shipping drums and is skid-mounted for ease of movement. Special shipping drums are not necessary for the very high hydrostatic pressures at which the pump operates (1,000 to 3,000 lb. per sq. in.) are confined to the pump itself, to the 20-ft. length of Teflon tube, and to the spray gun. At no time is there any pressure in the paint container and, as this is a cold, airless system, there is no fire risk from paint heaters.

Very high operating pressures are achieved by the use of a reciprocating, double-acting air motor coupled by a connecting rod to a reciprocating double-acting pump which multiplies the fluid pressure to twenty times the air pressure admitted to the air motor. When thus released and passed through the small orifice of the nozzle, paint is finely atomised and travels at high speed to the work target. As compressed air is not used to atomise the paint, there is no rebound of air from the sprayed surface. This method of application is consequently faster, gives a better finish, and provides a paint saving of approximately three gal. out of every ten gallons sprayed by conventional methods.

Pump, air-operated paint agitator, and air inlet pressure-reducing valve are mounted together on the drum head assembly. This, when in position, is held rigidly by two cover hold-down rods and fits snugly over the paint drum. An inspection port facilitates examination of the paint when the assembly is in position.

Changing drums is quick and easy with an air-operated elevator, which raises and lowers the complete drum-head assembly.

Price is £587 10s. Delivery is ex-stock. Further details can be obtained from Alfred Bullows & Sons Ltd., Long Street, Walsall, Staffs.

Labour-Saving Screwing Machine

A NEW transportable pipe-screwing machine has been designed for pipe, bolt or bar work on site or in the workshop.

Capacity is from ⅜ in. to 2 in. B.S.P., A.P.I., Conduit, Briggs and A.N.F., and also Whitworth, B.S.F. and U.N.F., from 7/16 in. to 1½ in. Chasers can be provided for special threads. The machine can also be supplied with universal tailshaft and receder head to extend the capacity up to 8 in. B.S.P.

Especially useful and labour-saving features include: reduced cutting time for 2 in. B.S.P. taper; reduced die-changing time; cutting-off and de-burring attachments; an integral grinding fixture; a positive gripping spin chuck drives the work, and a centralising spin chuck is at rear of spindle. The machine can be supplied mounted on a trolley with tray.

Further details can be obtained from the manufacturer, Smart & Brown (Machine Tools) Limited, 25, Manchester Square, London, W.1.

Swivel Facescreen Protector

THE Monogard is a swivel facescreen protector and is the first of its kind to be placed on the British or European markets.

It will not permanently mist up under any conditions, does away with the "shut-in" feeling common with goggles, spectacles, and screens, and permits wide vision.

A versatile shield, it can be fitted with a clear screen for general protection against flying particles or chemical splashes, green anti-glare for light reduction and either GW1, 2, 3 or 4 for gas welding.

Other advantages are the adjustable cushioned head harness, overall light weight, and a design which allows it to fit over the largest prescription spectacles.

Further details can be obtained from the manufacturer, the Safety Service Co. Ltd., "Itex" House, Wendover Road, London, N.W.10.

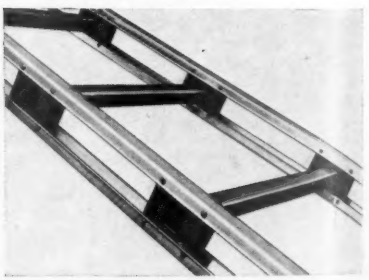
Light Alloy Ladders

LACON light alloy ladders are lighter and stronger than any existing ladders because their unique patented "U" sections, combined with metal mass at the union of rungs and stiles, give great strength and durability where it is most needed. Also, the breadth of the stile section varies according to length of ladder to ensure a sectional area providing optimum tensile strength over total length of ladder.

The stile comprises two "U" sections with inward-facing bulbed rims. The rungs are fluted to give a "non-slip" tread and riveted at each end to extruded sections. These assemblies are riveted to the two "U" sections forming the stile.

The range includes step ladders, lean-to ladders, and combined step and lean-to models. Of particular interest is the type 23/404, a folding four-section ladder which can be extended to a total length of 48 ft. 6 in. and can also be used as a step ladder at a height of 23 ft. 3 in. and folded down to 12 ft.

Further details can be obtained from the manufacturer, Light Alloy Construction Limited, Mowden Hall, Darlington.



Ministry of Transport Accident Report

Smedley Viaduct Signalbox, near Manchester, October 15, 1959*: British Railways, London Midland Region*

Colonel W. P. Reed, Inspecting Officer of Railways, Ministry of Transport, inquired into the collision, which occurred at about 4.10 p.m. at Smedley Viaduct Signalbox, near Manchester, between a light engine and a two-car diesel passenger train. The engine, on the up fast line, passed at moderate speed the colour-light home signal, which showed a yellow instead of a red light. It there collided with the 4.5 p.m. down diesel train from Manchester Victoria to Rochdale, which was travelling under clear signals from the branch to the down fast line. Trespassers had tampered with the up fast line home signal, to make it give a yellow instead of a red indication. The signalman had failed to set the route ahead so that the engine could not collide with the diesel train.

Both drivers had time to apply the brakes, and the impact was not severe. Ten passengers and the driver and guard of the diesel train suffered minor injuries, and the signalman collapsed from shock. All four lines were blocked, but trains were diverted to an alternative route, and little delay occurred. Normal working was resumed after 4½ hr. The weather was fine and clear.

The engine was not derailed except for the rear wheels of its bogie, and suffered only minor damage. Some damage was caused to the leading coach of the diesel train, and the front windows and the off-side driver's window were shattered. The remaining windows remained intact. All windows were equipped with safety glass.

Site of Accident

Smedley Viaduct is about 1¼ miles from Manchester Victoria on the four-track line to Oldham and Rochdale. It is joined there by a connection from the Manchester Victoria-Bury line, leaving the latter at Irk Valley Signalbox, ¼ mile away. This connection is known as the Irk Valley Fork.

The ground rises quickly on the country side of the viaduct, and the line runs into a cutting with brick retaining walls, in a closely built-up area. After 100 yd. the cutting gives place to a tunnel. From Smedley Viaduct to Monsall Lane the line steepens from a gradient of 1 in 113 to one of 1 in 63. The Weber Street over-bridge somewhat obscures the Smedley Viaduct signalman's view in this direction.

The up home signals are colour-light, to give enginemen a better view as they come through the tunnel. They are on a lattice bridge, and are three-aspect signals, except those for the through lines, which have a stand-by auxiliary yellow lamp. Berth track circuits are provided at these signals.

They were converted from semaphores in 1936. They have since been controlled by electric switches linked to weight bars carried on short posts fixed at the top of the retaining wall on the down side. The bars are operated mechanically, and the position of each bar is "repeated" in the signalbox. There is also one indicator in the box for each group of signals, fast and slow.

Acceptance of a train from Monsall Lane proves that the home signal levers are normal in the frame, but does not prove the signal aspects. Because of the gradients, trains from Monsall Lane and Irk Valley can be accepted only under Block Telegraph Regulation 4, which demands a full ¼-mile clearance beyond the relevant home signal.

There is much trespassing in the area, especially at the cutting. A sleeper fence is topped with two or more strands of barbed wire, but adjoining back-yard walls provide easy access. Additional barbed wire has been installed near the signal bridge.

Drivers' Evidence

The driver of the down diesel train said he had travelled at proper speed under clear signals. When about to enter the crossover, he saw the light engine pass the home signal, but expected it to take the parallel crossover. On realising the contrary, he made a full brake application, and by the time of the impact had reduced his speed to 5 or 6 m.p.h.

The driver of the light engine said that his home signal was showing yellow and he passed it at caution. He saw the diesel train approaching, but assumed it would travel on the down slow line; when he saw it take the crossover, he applied his brake. At the time of the collision he estimated his speed at 10 m.p.h. His evidence regarding the signal was confirmed by his fireman and also by the driver of another engine, which was standing at the up slow home signal.

A signal lineman, who arrived at the box within 10 min. of the accident, said that the lever (No. 6) working the up fast home signal was normal in the frame, but that the weight bar repeater showed "off." With two inspectors, who had also arrived, he examined the signal, and found it showing a yellow aspect. He also found that the weight bar was in the "off" position, resting on a small piece of charred wood, inserted between it and the adjacent weight bars, which were (properly) in the "on" position. On removing this wood, the weight bar returned to the "on" position.

Trespassing by Children

The lineman said that he had often seen children trespassing, and had failed to catch them. Signal lamps had been broken by stone-throwing, and once the sleeper platform carrying the weight bars had been set on fire. Previously, however, there had been no tampering with the signals.

A railway police inspector said that co-operation with the City Police was good, but that it was difficult to apprehend trespassers. People living in the area were by no means sympathetic where children were involved.

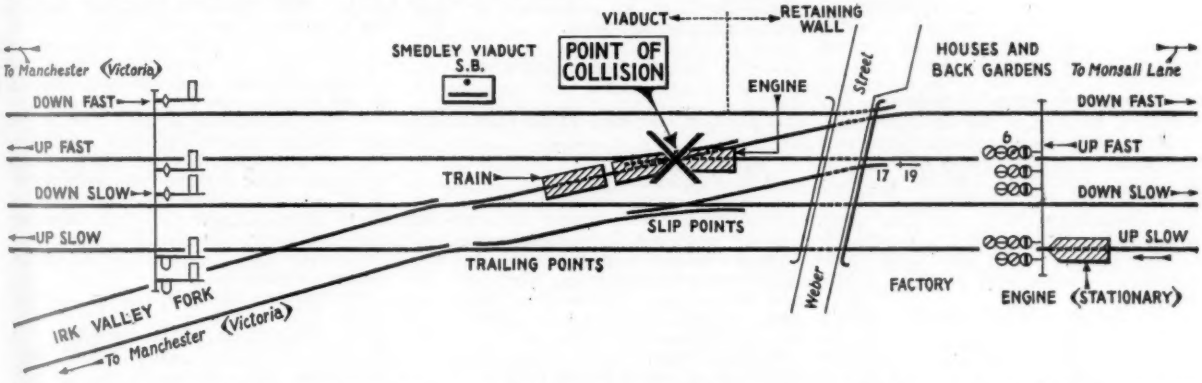


Diagram showing circumstances of accident at Smedley Viaduct Signalbox, near Manchester, British Railways, London Midland Region, October 15, 1959.

The signalbox was manned by a relief signalman, who was 26 years old, and had been a relief signalman for 4½ years. He said he knew the box well. He had seen the repeater for the weight bar return to "on" after the engine previous to the one involved in the collision had passed, at 4.3 p.m.

At 4.2 p.m., he stated, he accepted an engine on the up slow line, and at about 4.5 or 4.6 p.m. he brought it to a stand at his home signal, to give precedence to the down diesel train. He accepted this at 4.8 p.m., with his road set right across to the down fast line. To do this he had to set his up slow facing points towards the fork. Immediately after that he accepted the engine on the up fast, but did not look at No. 6 signal weight bar repeater.

He recorded "train entering section signal" for the down diesel train, as received at 4.9 p.m., but had not entered the time for the up fast engine before he saw it pass his home signal. He then ran to his window and vainly tried to attract the attention of both drivers.

Examination of relative distances, with entries in the Monsall Lane register, suggests that the Smedley Viaduct signalman must have accepted the engine before he accepted the diesel train. The signalman insisted that this was not so.

He also said that he knew he could not accept trains from Monsall Lane without the proper clearance ahead of his home signal. His explanation was that he had freed his

facing points (No. 17) by restoring his facing-point-lock lever (No. 19), but that by mistake he had then pulled No. 19 again instead of No. 17.

Incorrect Statement on Interlocking

When it was pointed out to him that to set the road properly, he should have pulled two more levers, working respectively the slip points on the down slow and the trailing points on the up slow, he replied that the interlocking would have prevented him from pulling No. 19 after No. 17 unless he had first pulled these two other levers as well. This reply was incorrect, as No. 19 can be pulled after No. 17, even with the other two levers normal. Again, if No. 17 had been pulled and the other two left normal, the only effect would have been that the engine would have trailed through these other points. There would have been no collision. This route-setting would have obstructed the road ahead of the engine at the up slow home signal, but that would have been in order, as that engine had been brought to a stand.

Evidence from the supervising staff showed that this signalman had given satisfaction in his work, but that he was not easy to talk to while on duty, as he seemed unable to concentrate on his normal work if distracted in any way. He was reliable and hard-working, but not outstanding.

Inspecting Officer's Conclusion

Colonel Reed states that the direct cause of the accident was mischevious interference with signal equipment, probably by children. The engine on the up fast line was fully under control, and the driver would undoubtedly have stopped it at the home signal. A contributory cause was the signalman's failure to carry out the Block Regulations regarding the acceptance of trains at this junction.

The exact moment of tampering with the weight bar was not determined, and the signalman's evidence that he saw the repeater return to " on " after the previous train is not rejected. But it seems more likely that the piece of wood was inserted when the bar was lifted, rather than that the bar was first lifted by hand.

Colonel Reed can see no general reason, such as pressure of work, why the signalman failed to set the road properly. If he accepted the up line engine, with the route set for the through direction, *before* he accepted the down diesel train, this might well have been the initial error of judgment which caused him to try and re-set the road hastily when he was offered the diesel train and before he answered the " Is line clear ? " signal. He may have feared that if he refused it, he would have been criticised for the delay, as he could have held back the engine at Monsall Lane. If, however, he accepted the down diesel train first, there was not even the excuse of haste for his ill-executed attempt to set the road in a manner which at best can be described as slipshod. His actions are a good illustration of the danger that can arise when signalmen curtail the proper box working procedure.

The supervisory staff, Colonel Reed considers, had not been remiss in their methods of inspection, but the evidence suggests that this signalman's promotion to relief signalman had been too rapid. The railways have difficulty in retaining men of suitable character and intelligence for the posts of signalmen, and Colonel Reed has no doubt that men are promoted more rapidly than formerly, and that the choice of suitable men is more restricted.

The maintenance of quality in the signalmen's cadre is now under close examination by the British Transport Commission, and it is to be hoped that ways will be found of retaining the right kind of man for this responsible duty, despite the competing attractions of industry.

Trespassing and mischief by children, he points out, can have serious consequences. No doubt these activities are difficult to curb, and Colonel Reed understands that education authorities have responded well to requests from British Railways that children should be warned against trespassing. He is sure that the authorities will do what they can to teach young people that tampering with the railway is neither brave nor clever but contemptible. But teaching will be of limited value unless reinforced by home discipline by parents on whom responsibility lies for their children's behaviour.

Trespassing should also be made more difficult by strengthening weak points in fences. Colonel Reed realises that unclimbable fencing could be provided only at prohibitive cost. But there are places near the up home signals where walls of backyards abut on to the sleeper palisades, and these could be strengthened.

The up home signals are to be re-positioned shortly, as part of the modernisation of the East end of Manchester Victoria Station. Meanwhile the existing signals will be converted to electrical operation with track-circuit controls, as a measure to avoid interference by trespassers.

British Railways Electrification Conference

Britain's advanced techniques in the new a.c. system of railway electrification have attracted world-wide interest and some 200 railway engineers from abroad will visit Britain this autumn for the British Railways Electrification Conference. They will see the new electric train services which are expected to be in operation by September, on the Manchester–Crewe line of the London Midland Region. They will also be shown something of electrification progress in the Eastern Region, including the Colchester–Clacton–Walton line, which was the first line in Great Britain to be electrified on the British Railways new standard 25 kV., 50 cycles a.c. system.

Works Visits

The conference, which will last for a week, opens on October 3. During the preceding week as well as in the week afterwards, foreign visitors will be shown railway equipment in production at the works of various manufacturers who are suppliers to British and overseas railways. These visits will supplement the exhibition of manufacturers' equipment which is being specially staged at Battersea Wharf, London, concurrently with the conference. This exhibition will be opened by the Minister of Transport.

In this way, the engineers of railway administrations in many parts of the world will be able to study not only technical progress on British Railways, as shown by new trains in action, but the advanced techniques employed by British manufacturers in the production of locomotives and electric traction equipment of all kinds.

Formal Opening Ceremony

The conference will take place at the Institution of Civil Engineers, Westminster. There will be a formal opening ceremony on October 3, under the Chairmanship of Sir Brian Robertson, Chairman of the British Transport Commission. The Commission will give a luncheon for its guests at the Savoy Hotel after the opening session, and there will be a Government reception at Lancaster House that evening. On October 4, delegates will begin the discussion of some 40 technical papers which have been prepared by leading experts on both British Railways and the staffs of British manufacturers.

On October 5, delegates will leave Euston by special train for Manchester, when they will have the opportunity of seeing the newly electrified lines between Manchester and Crewe. From Manchester they will travel by electric multiple-unit train to Crewe and visits will be made to the new power signalbox at Wilmslow and to the electrification depot at Crewe. The discussion of technical papers will be concluded on October 6, at an all-day conference, the proceedings ending with a film show in the Great Hall of the Institution of Civil Engineers.

Eastern Region Scheme

On October 7, two special trains will take delegates from Liverpool Street for an all-day inspection of selected features of the electrification schemes and associated engineering works now completed or in hand in the Region. The visit will include the Liverpool Street Suburban lines and the Colchester–Clacton–Walton line, where equipment is in use for the first time for the automatic change of voltage between 25 kV. and 6.25 kV. while the trains are in motion.

The programme will include a visit to the electric train servicing and maintenance depot at Ilford, one of the largest and most up to date of its kind in the world, where various types of electric rolling stock and traction equipment in service in the Region will be displayed for inspection.

On Friday evening, October 7, delegates will be entertained at Guildhall in London, by the British Electrical & Allied Manufacturers' Association and the Locomotive & Allied Manufacturers' Association of Great Britain. These two trade organisations are, jointly with the British Transport Commission, the sponsors of the entire conference programme.

The conference will offer railway engineers of other countries a unique opportunity of participating in the most comprehensive survey of railway a.c. electrification ever attempted. The manufacturers' facilities for viewing their works will also enable delegates to make a thorough survey of the industry's extensive resources in a way that would not otherwise be possible in so short a time.

New Plan for Channel Islands Services

A plan to remodel the British Railways steamer services to the Channel Islands has been announced by the Southern Region, British Railways. The object is to reduce the heavy loss on the services and also to raise the standard of comfort for passengers.

The plan has been submitted to the South Eastern Area Transport Users' Consultative Committee. If the Committee agrees, British Railways expects to save more than £200,000 a year on the Channel Islands passenger services alone.

Weymouth as Mainland Port

The following major changes are envisaged :— (1) To use fewer, but bigger, ships to run the services ; (2) to concentrate all ships on the shortest sea route, and using only one mainland port, Weymouth ; and (3) to introduce a one-class, comfortable, standard on all services.

The basis of the scheme is the two new ships now being built, the first to be completed this autumn. These, with the one ship already in service, will be the total new fleet. Hitherto there have been five or more ships to run the services. The three ships between them, it is stated, can carry as many passengers as before in greater comfort

because they are bigger and better suited to the task than the older ships.

This can only be done by abandoning the present double service to and from both Weymouth and Southampton. Weymouth is considered more suitable as the mainland port because it is nearer the Channel Islands, three-quarters of the distance from Southampton.

Passengers from Southampton itself will be able to join the Waterloo–Weymouth Harbour boat train at Southampton Central, and the shorter voyages will mean little difference in the overall time for their journey.

Freight which is at present carried on the passenger steamers between the Channel Islands and Southampton will be carried by British Railways cargo ships direct between the Channel Islands and Southampton. Two new ships were placed in service recently.

Many of the permanent staff for services based on Southampton are likely to be needed for the intensive service from Weymouth if the scheme is approved, and every effort will be made to avoid dismissals. The additional seagoing staff engaged during the summer often have to be recruited from other ports already.

If the Committee agrees, the scheme will be introduced in the summer of next year.

The timetable provides, in summer, for a day service daily in both directions, with night services at weekends in the season. In the winter service (September to May) there would be a night service from Weymouth thrice weekly, and a day service from Jersey and Guernsey, with additional sailings in the autumn and spring.

SMOKE CASUALTIES IN NEW YORK TUNNEL FIRE.—Several hundred passengers in underground trains were trapped for more than an hour earlier this week by a fire in a tunnel near Grand Central Terminal, New York. The fire was quickly extinguished, but not until after it had filled the tunnel with dense smoke from burning insulation. Before the trapped passengers could be led up to the street, scores were overcome by smoke. Many were treated at emergency stations set up on pavements near the terminal, but 127 had to be taken to hospital. There was some hysteria among the trapped persons, but no serious panic.

BROOKE TOOL MANUFACTURING CO., LTD. AT INTERNATIONAL MACHINE TOOL EXHIBITION.—A comprehensive range of screw-feed and cam-operated unit heads up to 15 h.p. and with drilling capacities of up to 3-in. dia. in mild steel will be included in the exhibits of the Brooke Tool Manufacturing Co. Ltd., at the International Machine Tool Exhibition at Olympia on June 25—July 8. Unit-head machines to be shown will include examples which stress the versatility of unit construction for special-purpose duties. Additional exhibits will be a complete range of cutting tools, hand and machine reamers, including expansion and adjustable types, high-speed twist drills, rapid-slip drill chucks, tapping attachments, counterboring sets, gear pumps for suds and oil, and plain and swivel machine vices with cam and screw action. Cardinal three-jaw drill chucks will include models with capacities up to ½-in. Special tools manufactured to suit particular requirements in the engineering and allied trades will be shown and also carbide and ceramic or sintered-oxide bladed milling cutters, carbide-tipped reamers and side and face cutters, metal-slitting saws, helical cutters, centres, and masonry drills.

Parliamentary Notes

Borrowing by Nationalised Industries

Exchequer advances to the nationalised industries were discussed on the Finance Bill in Committee of the whole House on June 1.

Mr. G. Nabarro (Kidderminster—C.) wanted a nationalised industries bill with a clause for each of the nationalised industries. Each of them could be debated in turn.

Mr. J. W. Peyton (Yeovil—C.) spoke of profound disquiet at the lack of effective control over the progress of these vast industries.

Viscount Hinchingbrooke (Dorset S.—C.) said it was time the Government created a new method of accountability.

Mr. Heathcoat Amory, Chancellor of the Exchequer, said it was a mistaken belief that Parliament controlled the borrowings of the nationalised industries in the Finance Bill. That was not so. Each of them had already been granted by Parliament to borrow up to a certain limit. Information about the investment programme was likely to be available in the autumn and information about the estimated figure of what would be needed for borrowing in February. The Government was examining these questions urgently in view of the representations which had been made. It was expected that by the autumn new proposals could be made, which he hoped would be agreeable to the House for handling these matters on a more satisfactory basis, including supplying information to the House which it could examine and debate.

Mr. Nabarro thanked the Chancellor for "the substantial fashion" in which he had met the objections to the clause.

Closing of Stations in Northern Scotland

Sir David Robertson (Caithness & Sutherland—Ind. U.) on the motion for the adjournment for the Whitsun Recess on June 3, appealed for the postponement of the closing of wayside stations on June 13, on the line operating from Inverness to Wick. He said the most outstanding feature of the efforts of all Highland M.P's in this matter was the lack of Ministerial responsibility. All the Minister could do under the Act was to intervene, and it must be an intervention on a matter which affected all the railways. He could intervene, no doubt, to say that all engines should be painted a certain colour and coaches another, but he could not intervene in regard to the closure of railways in one half of Scotland. It was one of the restrictions imposed by the Act. It meant literally that Parliament had no control whatsoever over the railways.

Another feature which had come out with the utmost clarity in recent negotiations was the omnipotence and power of the Transport Users' Consultative Committee for Scotland. It did not seem to be acting in any way like a consumers' council. Everything to which the objectors had objected had been overruled. The secretary of the Committee was a railwayman—most charming—who had a room almost across the corridor from the General Manager of British Railways in Scotland. A man who had spent most of his life on the railways was the most unsuitable man to be put in a job of this kind, because he was bound to look at things through railway eyes. He made no imputations against members of the Committee, but he believed that they were at a distinct disadvantage in having to face a bloc of full-time operating managers of the railway and bus services.

They were told that the motive of the Commission under Government pressure that it was to reduce an annual deficit on the railways north of Inverness which now amounted to £400,000, by some £41,000 a year.

That was a heavy loss, but why was that area picked out? Why were 29 stations to be closed? Why were 79 men—maybe more—being declared redundant?"

Reduced Fares to Gain Traffic

Sir David Robertson then discussed the attraction of the Highlands for tourists, and suggested that instead of closing lines, the fares should be reduced. A Caithness man, who had been for some years General Manager of the railways in Ghana had written to him: ". . . cheap fares were introduced in 1935 by Mr. M. Smart, my predecessor, and I find third class bookings exceeded those of 1934 by 1,269,535 journeys or 70 per cent, whilst receipts rose by £235,223 or 29 per cent. These increases were greatly helped by the cheap fares between Accra and Nsawam and Accra-Koporidua. There was a further increase in 1936 of 432,000 journeys."

He continued: "I will send that letter to the Minister today, because he should read it . . . It was a great success. All my life I have been convinced that the only way in which railways can pay is by going for cheap travel. The railways have to be run seven days a week to provide universal services. If we fill the trains and run more and more there will be no difficulty in making the railways pay their way. That was the experience in Ghana, and it was the experience in my youth when the railways were privately owned and when one could travel long distances in fast trains, in cleanliness and comfort at low rates. It could be done again."

End of Railways in Far North?

Mr. John MacLeod (Ross & Cromarty—N.L.U.) said this was the last chance to make representations. There must be some method by which the Government could intervene when these matters affected the social welfare of the whole of the North of Scotland.

He quite appreciated that the B.T.C. found itself financially in the most awkward position, but he believed that it was itself to blame to a great extent by not making the services attractive. The Transport Users' Consultative Committee said that there was no future traffic potential in the affected areas. That was rubbish. If the Government agreed with that they might as well pack up in the Highlands. The logical conclusion to this negative approach was to do away with the railway system altogether. That was exactly the contingency that the people in the Highlands feared.

If these stations were closed to passenger services he understood that alterations would have to be made in the signalling equipment and so on which made it unlikely that they would ever be opened for passenger services again.

B.T.C. Responsible for Closures

Mr. John Hay, Joint Parliamentary Secretary to the Minister of Transport, said there were many questions he could not answer, because they related very much to the commercial propriety of what the British Transport Commission was seeking to do. The Minister was expressly excluded from having any responsibility for action in that regard.

It was an essential part of the Government policy towards transport, just as it was an essential part of the Commission's policy towards its own undertaking, that the general railway system should take account of the great changes which had taken place in the last 100 years and should be streamlined and made more compact so as to reduce the burden of those services which had become completely unremunerative.

The Commission started with a bias in favour of the maintenance of its existing services, wherever possible. It was only when it was convinced that there was no present

or future possibility of a profit being made that it was obliged to propose the removal of services or the closure of stations.

Railways Fighting Back

The outcome of the changes, Mr. Hay added, was that many railway branch lines had become hopelessly uneconomic. Nevertheless, the railways were fighting back wherever they could. They had already developed several different types of lightweight diesel stock for better services and cheaper operation. They had had some striking successes where there was an adequate traffic potential. Although operating costs could sometimes be reduced by new equipment, it was often the case that lack of traffic alone made it impossible to secure a significant overall improvement.

Over the last 11 years, from 1948 to 1959, inclusive, the Commission had been obliged to withdraw passenger or freight services, in some cases both, from 401 branch lines affecting 3,500 miles of line. To put the matter in perspective, it was only right to point out that as a consequence the Commission had been able to make cumulative savings of nearly £4 million a year.

During 1959 the Transport Users' Consultative Committees dealt with 49 cases of branch line closures. The estimated saving from those closures was about £700,000.

Wherever an economy could be made it was only right in the interests of the taxpayer that the Commission should see that it was made.

The policy of closures would have to continue for some time yet. The White Paper re-appraising the Modernisation Plan of British Railways, estimated that by 1963, 1,850 miles of route would be scheduled for complete closure. The number of stations to be closed would be greater, relatively speaking, than the planned reduction in route mileage. This was due to the large number of intermediate stations expected to be closed on lines remaining open for through traffic. The Scottish Highlands was a case of this kind.

Realities of Situation in Highlands

With regard to this case, the B.T.C. proposal to close from June 13 next, two small branch lines and withdraw passenger and some freight services from a number of small wayside stations in the Highlands was put to the Scottish Transport Users' Consultative Committee in May, 1959.

These lines were hopelessly uneconomic. They had experienced more than any others in the rest of the country the drift of traffic especially short-distance traffic, from the railways to the roads. Apart from the branch lines, main line stations were on 161 miles of main lines between Inverness and Wick, and there were 40 stations on those 161 miles, which gave an average of a station for every four miles. These were to be reduced by about 20, and even then there would be a station on the average every eight miles.

The annual revenue which the Commission had been receiving from these stations on branch lines which were to be closed was £6,000 from passengers and £3,000 a year from freight, a total of £9,000. This was the revenue coming in, and the Commission estimated that the scheme which it proposed would reduce its current heavy losses on these lines by £41,000 a year, and would also—and this was important—give better services between the remaining stations.

To compensate for this reduction, a number of additions and adjustments to bus services will be made. This is not a particularly difficult operation, because the bus services are provided by Highland Omnibuses, Limited, a company controlled by the British Transport Commission.

The Commission has made no secret of its belief that these closures are essential in the interests of maintaining the main line north of Inverness. If these lines continued to lose money in this way—and the Commission had made no bones about this—it would be obliged to consider closure of the main line north of Inverness altogether.

Questions in Parliament

Road and Rail Co-ordination

Mr. C. Mapp (Oldham E.—Lab.) asked the Minister of Transport on June 1 what proposals he had made to the committee of inquiry dealing with the organisation and structure of the British Transport Commission in regard to the co-ordination of passenger road transport services in Lancashire with the rail services of the Commission.

Mr. Ernest Marples: None.

Mr. Mapp: Will the Minister say how he thinks that a committee of inquiry can give a fair appraisal of the B.T.C. services unless it takes into account questions of co-ordination of this kind ?

Mr. Marples: What the committee will take into account is another question. The question on the Order Paper asks what proposals I have made.

Mr. G. Wilson (Truro—C.): Many bus companies have arrangements with British Railways for standing joint road-rail committees, and in Lancashire the two principal bus companies, the Ribble Motor Services, Limited, and the North-Western Road Car Co. Ltd., have such a committee, and have had it since 1929.

Mr. Marples: I am well aware of that.

Capital for Diesel Trains

Mr. George Darling (Hillsborough, Sheffield—Lab.-Co-op.) asked the Minister of Transport on June 1 to what extent, in making the capital allocation to the British Transport Commission for the railway modernisation programme, he considered the amount required for the introduction of diesel train services on the Marylebone–High Wycombe–Princes Risborough Line, including alterations to stations, bridges and tracks, and new trains and oil installations; what provision he made for these purposes in his total allocation; and to what extent the cost of this part of the programme was to be met out of Treasury loans.

Mr. John Hay, Joint Parliamentary Secretary to the Ministry of Transport: Allocations to the British Transport Commission are based on annual programmes of investment submitted by the Commission and covering the activities as a whole of that body. Expenditures on such services would come from within the allocation, and be financed either from the Commission's internal resources or by Exchequer advances.

Mr. Darling: Is the fact that the hon. Gentleman cannot give the figures for which I ask evidence that he and the Minister of Transport have sufficient confidence in the Commission that it can go ahead without Parliamentary scrutiny ? Some of his friends have been pressing the Commission, quite rightly, to undertake this expenditure–although it is a small scheme it will mean heavy expenditure no doubt on the grounds that what benefits their constituents is desirable, but that public expenditure that does not benefit their constituents is probably wasteful and extravagant, and ought to be stopped.

Railway Superannuitants

Mr. H. Hynd (Accrington—Lab.) asked the Minister of Transport on what date, in implementation of his recent promise, he communicated with the Chairman of the B.T.C. regarding the position of railway superannuitants; and what reply he had received.

Dame Irene Ward (Tynemouth—C.) asked the Minister of Transport whether he had yet received a reply from the Chairman of the Commission to the communication he undertook to make to him on the pensions of railway superannuitants; and what was the nature of the reply.

Mr. Ernest Marples, replying to both questions together: On March 7 last I drew the attention of the Chairman of the B.T.C. to the views expressed on this subject by the Member for Tynemouth on the previous day, but my letter did not call for any reply.

Mr. Hynd: As the Commission is apparently willing to fulfil the normal obligations to these people who are trying to live on out-of-date pensions but are unable to do so, is the Minister prepared to give the Commission some assistance towards helping these people ?

B.T.C. Proposals for Pensioners

Mr. Marples: The Commission has made certain proposals which are under consideration, but this is part of the wider question of the reorganisation of the Commission, especially its finances.

Dame Irene Ward: I have a letter from the Chairman of the British Transport Commission telling me that he has made representations to you and expressing great concern about the position of these railway superannuitants. In view of the fact that the Commission desires something to be done, is my right hon. Friend prepared to take on the battle with the Treasury, having regard to the fact that our election pledge covered all pensioners ?

Mr. Marples: I did know that the Commission had written to her because I received a copy of the letter, and I told the Commission that I would look at this letter in the light of the whole of the finances of the B.T.C.

Mr. Ray Gunter (Southwark—Lab.): What are the channels of communication concerning these proposals between the Department and the Commission ? I have led deputations on this matter to his predecessor, and that so far we have received a lot of sympathy but no support. In any future discussions with the B.T.C. a number of these people, by reason of the conditions of service, were compelled to join the old railway superannuation fund, but they now think that they would have been better off if they had never contributed a penny to the fund but had relied on National Assistance. I am sure that that is not the Tory idea of the rewarding of thrift.

Mr. Marples: The channel of communications is that the Commission wrote to me making certain proposals, and I replied that they are under consideration but, as I said in my answer, the whole question has to be considered in relation to the wider considerations now being given to the finances of the Commission as a whole.

Mr. Hynd: In view of the unsatisfactory nature of the reply, I beg to give notice that I shall seek to raise the matter on the Adjournment.

Staff and Labour Matters

Railway Pay Meeting Adjourned

At a meeting of the Railway Staff Joint Council on June 2, there was a full discussion on the reports of the working parties appointed to examine the proposals of the Guillebaud Committee. There remain several points to discuss, including the position of railway staff at packet ports. The outcome of the discussions is being further considered by all parties and the meeting was adjourned to a further early date.

Contracts and Tenders

Call for diesel-hydraulic shunting locomotives for Victoria

The Export Services Branch, Board of Trade, has received calls for tenders as follow :—

From Victoria:

25 diesel-hydraulic shunting locomotives.

The issuing authority and address to which bids should be sent is the Secretary, Victorian Railways, Melbourne, C.1. The tender No. is 61,701. The closing date is June 29, 1960. The Board of Trade reference is ESB/13791/60.

320 roller bearing axelboxes.

The issuing authority and address to which bids should be sent is the Secretary, Victorian Railways, Melbourne, C.1. The tender No. is 61,692. The closing date is July 6, 1960. The Board of Trade reference is ESB/13790/60.

From South Africa :

1 five-channel v.h.f. radio link in accordance with S.A.R. specification EW(C) 3/60

2 pairs of radio links (single channel) v.h.f. battery operated in accordance with S.A.R. specification EW(C) 2/60

1 15-W. v.h.f. R/T fixed station in accordance with S.A.R. specification EW(C) 4/60

4 10-W. v.h.f. R/T mobile stations in accordance with S.A.R. specification EW(C) 4/60.

The issuing authority is the Stores Department, South African Railways. Bids in sealed envelopes, endorsed "Tender No. C.8295 : V.H.F. Radio Equipment" should be addressed to the Chairman of the Tender Board, P.O. Box 7784, Johannesburg. The closing date is July 15, 1960. The Board of Trade reference is ESB/14546/60.

From Sudan :

15 oil tank wagons, 1,600—1,700-gal. capacity, 2-ft. gauge.

The issuing authority and address to which bids should be sent is the Assistant General Manager (Supplies), the Sudan Gezira Board, Barakat, Sudan. The closing date is June 13, 1960. The Board of Trade reference is ESB/13918/60.

580 double-bogie open goods wagons, 9-ton capacity without side doors.

The issuing authority and address to which bids should be sent is the Assistant General Manager (Supplies), the Sudan Gezira Board, Barakat, Sudan. The closing date is June 19, 1960. The Board of Trade reference is ESB/13919/60.

From Queensland :

Labour, plant, equipment and material for the rehabilitation of the existing 242 miles of 3-ft. 6-in. gauge main line, extension of passing loops, and yard work on the Western Line of the Northern Division of the Queensland Government Railways between Richmond and Duchess.

The issuing authority and address to which bids should be sent is the Secretary, the Commissioner for Railways, Railways Building, Adelaide Street, Brisbane. Tender documents are obtainable from Ford, Bacon & Davis Inc., P.O. Box 443F G.P.O., Brisbane, on payment of £A10. A preliminary deposit of £A10,000 is required. The closing date is August 1, 1960. The Board of Trade reference is ESB/14469/60. No further information is available at the Board of Trade.

From Pakistan :

900 manganese steel liners for axlebox horn cheek

The issuing authority and address to which bids should be sent is the Chief Controller of Stores, Eastern Bengal Railway, Pahartali, Chittagong. The tender No. is P5/EB1/41/60. The closing date is June 20, 1960. Tender forms can be obtained from the Office of the Eastern Bengal Railway on payment of Rs.10. The Board of Trade reference is ESB/14584/60. No further information is available at the Board of Trade.

4 metre-gauge diesel railcars, complete with one high-power diesel engine, transmission, control gear, and so on

Alternatively

4 metre-gauge diesel railcars, complete with two high-power diesel engines, transmission, control gear, and so on

8 metre-gauge bogie trailing carriages, non-powered.

The issuing authority and address to which bids should be sent is the Secretary, Railway Board, Ministry of Railways & Communications, Government of Pakistan, Karachi. The tender No. is P & D-60/RC/1/TDR. The closing date is July 26, 1960. The Board of Trade reference is ESB/14674/60. Photo-copies of tender documents are not available at the Board of Trade.

From Greece :

4 items of locomotive tyres.

The issuing authority and address to which bids should be sent is the Purchasing & Stores Department, Hellenic State Railways (SEK), 126, Polytechniou Street, Athens. The tender No. is 4654. The closing date is June 21, 1960. The Board of Trade reference is ESB/14691/60.

Further details relating to the above tenders together with photo-copies of tender documents, unless otherwise stated, can be obtained from the Branch (Lacon House, Theobald's Road, W.C.1).

Notes and News

Extension of Electrification in the Eastern Region.—November 21 has been fixed by the Eastern Region, British Railways, as the day for introducing electric train services between Liverpool Street and Chingford, Enfield, Hertford East, and Bishops Stortford. These lines are being connected on the 50-cycle, a.c. system.

Western Region Publicity.—One of three new posters issued by the Public Relations & Publicity Office of the Western Region of British Railways is illustrated on this page. It was printed in six colours by Jordison & Co., Ltd., for a two-year display throughout British Railways. The print number is 2,250 with an additional 250 copies for display in North America. The artist was L. A. Wilcox. The other two posters advertise Somerset and the Fishguard-Rosslare route to Southern Ireland. The Somerset poster was printed in 12 colours by Chromoworks Limited and will be displayed throughout British Railways and in North America. The artist was Jack Marriott. J. S. Smith designed the Fishguard-Rosslare poster, which was printed by the Haycock Press Limited with a silk screen overprint by Planet Displays Limited in six colours for a two-year display throughout British Railways.

Visit of Mr. H. C. Johnson to Railway Training Centre, Longmoor.—The General Manager of the Eastern Region, British Railways, Mr. H. C. Johnson, visited the Eastern Region Squadron of the Army Emergency Reserve (Transportation), Royal Engineers, No. 150 Railway Squadron at the Railway Training Centre, Longmoor, Hampshire, during its annual fortnight training period.

New poster by L. A. Wilcox for the Western Region of British Railways

In the evening he dined with the officers, and the following morning presented a new flag to the squadron on parade. Later, he saw the squadron firing on the open range and visited the barracks and kitchens. A special train manned by members of the Squadron took Mr. Johnson over part of the Longmoor Military Railway. With Mr. Johnson were Mr. J. Bonham-Carter, Assistant General Manager, and Mr. T. C. B. Miller, Chief Mechanical & Electrical Engineer, Eastern Region.

J. Brockhouse & Co. Ltd. Interim Dividend.—J. Brockhouse & Co. Ltd. has raised its interim dividend from 3 per cent to 4 per cent for the year to September 30, 1960. The previous year's final dividend was 7 per cent. The estimated profit, before tax, for the half-year to March 31, 1960, amounted to £544,874, compared with £368,545 for the corresponding period last year.

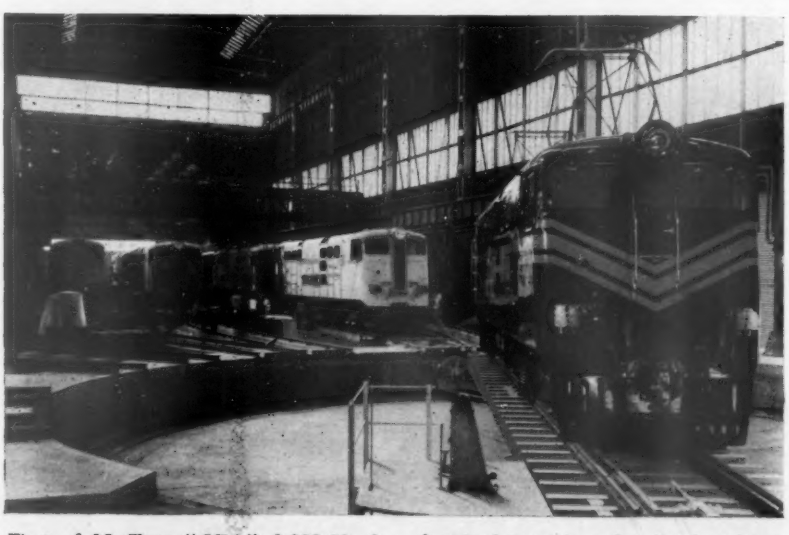
Vandalism on British Railways.—Wilful damage to passenger coaches and other railway property by hooligans may cost British Railways about £500,000 this year if vandalism continues at the present rate. Extensive damage has been reported in all regions of British Railways and is inflicted mostly on excursion, late-night, and week-end trains. As the Southern Region has already announced, there was £11,000 worth of deliberate damage to rolling stock in that region alone during the first three months of the year. During the same period, over 250 cases of vandalism occurred in the North Eastern Region where coach windows were broken, upholstery ripped and slashed, electric light fittings damaged, and lavatory compartments wrecked. Nearly 140 similar cases were reported in the Scottish Region, and over 1,000 items of damage to coach fittings were recorded through the same period in the London area of the London Midland Region.

Electric Locomotives for South African Railways.—Metropolitan - Cammell Carriage & Wagon Co. Ltd. recently completed at its Wednesbury Works the first of 35 Type "5E.1" 3,000-V. d.c. electric locomotives for South African Railways. They are the first all-electric locomotives to be built by the company. The main contractor, Associated Electrical Industries Export Limited, was awarded a contract for 135 of these locomotives, 35 of which were sub-contracted to Metropolitan-Cammell in May, 1959. The shipment of this first locomotive is being made in accordance with the contract date of May, 1960, and the order for 35 is due for completion in February, 1961.

Jones Crane Photographic Competition.—A first prize of 250 guineas and eight additional prizes, bringing the total to 600 guineas are being offered in a competition to find the best black-and-white picture of Jones Cranes. Sponsored by George Cohen, Sons & Co. Ltd., the 600 Group company which handles all U.K. sales of Jones Cranes, the competition is being run by the 600 Group Publicity Department. It is being widely announced through advertising in engineering, photographic, and other journals. The closing date for receipt of entries is December 31, 1960.

Withdrawal of Goods Services in Eastern Region.—Goods train services will be withdrawn by British Railways, Eastern Region, between Bury St. Edmunds and Thetford on June 27. This section of line will then be closed completely. A collection and delivery service for parcels and sundries traffic in the area will continue to operate, and facilities for wagon-load traffic will be available at Bury St. Edmunds and Thetford Stations. On the same date, goods train services will be withdrawn from Hatfield Peverel and Marks Tey Stations on the London-Ipswich mainline. The existing collection and delivery services for sundries traffic will continue to operate in these areas. For Hatfield Peverel, facilities for full wagon loads of freight will be available at Chelmsford and Witham, and for Marks Tey, at Chappel and Wakes Colne, Colchester, and Kelvedon.

United Steel Companies Limited Films.—The United Steel Companies Limited is again holding special film shows for shareholders at cinemas up and down the country. Two new colour films are being shown featuring two of the company's branches. The longer of the two films is "Stone into Steel," and it tells the story of the Appleby-Frodingham Steel Company in Scunthorpe, where over 5,000,000 tons of ironstone are transformed into 1,400,000 tons of steel each year. "Out of the Forest" is about United Coke & Chemicals Co. Ltd. which operates coke oven batteries in Sheffield. The coke is used in the ironmaking process at Appleby–Frodingham and the coke oven gas is piped to other steelworks in the United Steel group for heating purposes. In a film introduction to the one-hr. programme, Sir Walter Benton Jones, the Chairman of United Steel, speaks on the company's recent achievements and future plans.



First of 35 Type "5E.1" 3,000-V. d.c. electric locomotives for South African Railways recently completed at the Wednesbury Works of Metropolitan-Cammell Carriage & Wagon Co. Ltd.

Permutit Co. Ltd.—The net profit of the Permutit Co. Ltd. for 1959 was £187,190 (£168,968). The dividend was 20 (15) per cent. Fixed assets were £575,214 (£636,217). Net current assets were £1,502,564 (£1,250,233).

Brooke Tool Manufacturing Co. Ltd. Dividend.—Results for the first half of the current year to end-September by the Brooke Tool Manufacturing Co. Ltd. allow for an interim dividend of 5 per cent. This amount is influenced by the fact that no distribution was made in respect of the previous year.

Crowning of Railway Queen.—The crowning of Britain's Railway Queen will take place at Belle Vue Gardens, Manchester, on the occasion of the Railway Employees' Carnival on September 10. The ceremony will be performed under the Joint Presidency of Sir Reginald Wilson, Member British Transport Commission, and Mr. W. J. P. Webber, General Secretary of the Transport Salaried Staffs' Association. Candidates for the office of Britain's Railway Queen should be the daughters of British railway employees and should be aged between 14 and 16 years. Further information may be obtained from the General Secretary, W. F. Ferran, 155 Holmcroft Road, Gorton, Manchester, 18.

Benguela Railway Company in 1959.—The net revenue of the Benguela Railway Company in 1959 amounted to Escudos 158,402,016 (Esc. 151,344,921). The amount available for distribution was Esc. 185,572,715 (Esc. 126,955,380). New 5 per cent debentures to the nominal value of Esc. 69,240,000, repayable as from July 1, 1971, and chargeable as to interest and redemption on the earnings of the railway whether or not satisfied before the end of the concession in the year 2001, will be issued forthwith to Tanganyika Concessions Limited for cash at a discount of 10 per cent. Tanganyika Concessions Limited owns all the debentures and 90 per cent of the equity of the Benguela Railway.

Pressed Steel Co. Ltd. Results.—At the annual general meeting of the Pressed Steel Co. Ltd. held in London last week, Mr. Alex Abel Smith, the Chairman, stated that production of railway utility vans and three-car trains for the Glasgow electrification scheme, British Railways, Scottish Region, continued, and during the year the first deliveries of three-car diesel units were made besides various miscellaneous types of railway equipment and of mine cars. However, orders placed during the year by the company's main customer, the British Transport Commission, showed a further decline and, although the company obtained its share of such orders as there were, there was not sufficient business to keep the Linwood factory working to capacity. The accounts showed a profit for the year, after charging debenture interest, depreciation, and all taxes, of £2,461,506.

Stone-Platt Industries Limited, Encouraging Outlook.—The group trading profit and investment income for 1959 by Stone-Platt Industries Limited fell from £2,850,899 to £2,282,247. The dividend is maintained at 15 per cent. Although the total output was 11 per cent lower than in 1958, the Chairman, Sir Kenneth Preston, reports that future prospects are much more encouraging. He believes that the advantages of air-

conditioning for railway carriages are rapidly becoming more widely recognised for temperate as well as tropical climates. The meeting will be in London on June 23.

Railway Benevolent Institution Flag Day.—It has been necessary for the Railway Benevolent Institution annual Flag Day to be postponed until July 15.

R. J. Richardson & Sons Ltd. New Division.—A new division of R. J. Richardson & Sons, Ltd. has recently been formed. Known as Site Shotblasting (Gt. Britain), it will take care of the shot blasting on site of work too large for transport to the company's works.

B.E.T. Omnibus Services Limited.—The dividend declared by B.E.T. Omnibus Services Limited for the year ended March 31, 1960, was 12 per cent, tax free (11 per cent), and the net profit was £513,809 (£446,297). Investments were £3,971,291 (£3,970,981), market value was £6,195,000, and unquoted £2,838,031 (£2,772,196), valued at £4,411,000. Current assets were £1,001,204 (£902,338), liabilities were £302,249 (£280,047).

James H. Randall & Son Ltd. Office and Works Extension.—A new two-storey building with a floor area of 8,000 sq. ft. and a frontage of about 107 ft., in North Wharf Road, Paddington, London, W.2, was opened recently by James H. Randall & Son Ltd. The ground floor and a large area on the first floor is additional space for sheet-metal fabrication work. Improved office accommodation is also on the first floor. An unusual feature is a special barrel-vault roof.

Rolls-Royce Limited Dividend.—At a meeting of the board of Rolls-Royce Limited, it was decided to recommend the payment of a final dividend of 7½ per cent less income tax on £20,021,972, the paid up capital of the holding company, payable on July 26, 1960. An interim dividend of 2½ per cent was paid on December 15, 1959. The total dividend of 10 per cent for the year was payable on the capital as increased by the capitalisation of reserves in July, 1959, and the issue of additional workers' (1955) shares, and was equivalent to the distribution of 20 per cent made in respect of 1958.

British Standard for Industrial Protective Gloves.—A revised British Standard publication, B.S. 1651 : 1960, Industrial Protective Gloves, specifies 17 types of glove which offer protection against the majority of industrial hazards to which the hands are vulnerable, including shot blasting, welding, furnace work, and riveting. Materials for the gloves fall into four groups : leather, plastics, rubber, and cotton. Depending on the outcome of experiments with man-made fabrics and mixtures of man-made fibre and cotton, an amendment to the standard may be issued later. Copies, price 10s., may be obtained from the British Standards Institution, 2, Park Street, London, W.1.

A.R.O. Machinery Co. Ltd. at the International Machine Tool Exhibition.—At the International Machine Tool Exhibition at Olympia, London, on June 25-July 8, the A.R.O. Machinery Co. Ltd. will exhibit a comprehensive range of portable spot-welding equipment including two new designs for which illustrated descriptions are given elsewhere in this issue. The equipment ranges from light hand-operated welding guns, used for light-gauge sheet-steel repair work and general maintenance, to the largest industrial production units. All are complete with automatic process-control equipment—a simple weld timer to a complete process controller giving fully-automatic five-stage sequencing.

Closing of Auldearn Passenger Station.—Passenger train services have been withdrawn from Auldearn Station, near Nairn, Scottish Region, British Railways. Alternative rail facilities for passengers are available at Nairn, and buses serve the area. Alternative facilities for parcels traffic are available at Nairn Station. Goods train traffic is being dealt with at Auldearn Station.

Tourist Trade Britain's Second Largest Source of Dollars.—The British tourist trade is stated by the British Travel & Holidays Association to be, after manufacture of motorcars, the second largest source of dollar income for Britain. This year some 1,500,000 visitors from 83 countries are expected to spend nearly £200,000,000 in Britain on accommodation, meals, inland travel and so on ; £70,000,000 will be received by travel agents and shipping and air undertakings for bookings ; and shops expect to take £80,000,000.

New Diesel Multiple-Unit Section of Neville Hill Depot, N.E. Region.—The diesel multiple-unit section of the modernised Neville Hill Motive Power Depot at Leeds, North Eastern Region, British Railways, is to be opened officially on June 17. The new section forms an extension to a modernised steam locomotive shed, and provides maintenance, fuelling and repair facilities for a fleet of 250 diesel railcars, 117 of which are already operating on services radiating from Leeds. The opening ceremony will be performed by Sir Linton Andrews, who will be accompanied by Mr. T. H. Summerson, Chairman, and members of the North Eastern Area Board, British Transport Commission.

Gas-Turbine Locomotive.—The English Electric Co. Ltd. has under development an oil-fired gas-turbine 4-6-0 experimental locomotive of 2,700 h.p. which has undergone a series of tests at the locomotive testing station, Rugby. The locomotive is a private venture of the company. The running time at the testing station was given to mechanical proving tests and to establishing performance and fuel consumption at different rates of working. It is believed that this was the only occasion on which a main-line locomotive has been bench tested prior to the completion of the design. The locomotive is being completed for operation in revenue service with British Railways later this year.

Shell-Mex & B.P. Limited at the International Machine Tool Exhibition.—A demonstration of the stability tests to which Shell soluble cutting oils are subjected will be a feature of the Shell-Mex & B.P. Limited stand at the International Machine Tool Exhibition at Olympia from June 25 to July 8, 1960. Although tests of this kind have been the established practice for soluble oils in the company's laboratories for many years, the test rigs on the stand at Olympia will provide the first public demonstration of them. Visitors will have the opportunity of seeing tests of the emulsion conducted exactly as in a laboratory routine. There will be two test rigs on the stand. One will show the stability of a good quality emulsion. The other will show, by comparison, the effect of a soluble oil having a lower emulsion stability. The tests will be related to the Shell Dromus soluble cutting oils, an improved range of cutting oils which Shell-Mex & B.P. Limited placed on the market in 1959.

Road Haulage Association Annual Luncheon, 1961.—In 1961 the Road Haulage Association will hold an annual luncheon instead of an annual dinner as in 1960. The place will be Grosvenor House, Park Lane, London, W.1, and the date May 16, 1961.

Superheater Co. Ltd. Final Dividend.—A second and final dividend is recommended by the directors of the Superheater Co. Ltd. on the ordinary and A ordinary shares of 10½d. a share. The interim already paid was 4½d. a share. Uncompleted orders on hand, mostly for power plant, are in excess of current output by the company.

Institute of Materials Handling Weekend Conference.—The Scottish Division of the Institute of Materials Handling is to hold a weekend conference at the Peebles Hydro, Peebles, on October 28-30, 1960. The inclusive fee for resident delegates is £8. The conference fee for non-resident delegates is £1. Applications should be made to J. R. Miller, Mavor & Coulson Limited, Bridgeton, Glasgow, S.E.

Miniature Buffets for Newcastle–Carlisle Diesel Trains.—A new miniature buffet service will be introduced on June 13 by British Railways, North Eastern Region, in certain weekday diesel trains between Newcastle and Carlisle. Four trains in each direction will include the facility : the 10.30 a.m. and 12.20, 3.20 and 4.20 p.m. from Newcastle ; and the 1, 2.20, 5.25 and 7 p.m. from Carlisle.

Velvet Hall Converted to Public Delivery Siding.—The goods depot at Velvet Hall on the Berwick-Coldstream line of the North Eastern Region, British Railways, will be converted to a public delivery siding on June 13. There will be no change in the existing arrangements for the collection and delivery of small consignments by British Railways' road motor vehicles based at Tweedmouth.

"Waterways" Magazine Wins Award.—For the third year in succession *Waterways*, the staff magazine of British Transport Waterways, has received from the British Association of Industrial Editors, the Award of Excellence for the best publication in its class in the National House Journal Competition, 1960. The magazine is published monthly and produced under the direction of the Chief Publicity Officer of the British Transport Commission, who is also responsible for the editorial content. The layout is handled by Mr. Herbert Spencer, F.S.I.A.

Marcroft Wagons Limited Results.—The group net profit of Marcroft Wagons Limited for 1959 amounted to £34,318 (£28,038) and the dividend is 17½ per cent (12½ per cent, plus 2½ per cent bonus). Major N. E. Webster, the Chairman, in his circulated statement, reports that the Board has under consideration the desirability of revaluing the fixed assets. The increase in the authorised capital from £300,000 to £750,000 will afford a means for the acquisition of any suitable undertaking in which end the company is presently negotiating.

Wages Award to U.S.A. Footplate Staff.—An arbitration board in Chicago is reported to have rejected a demand by railway managements for a wage reduction of 15 cents an hour, but to have awarded to the Brotherhood of Locomotive Engineers two wage increases of 2 per cent each, the first to take effect on July 1, the second on March 1 next. The two increases are understood to cost the railways more than £4,650,000. It is thought probable that the award to the footplate staff will set a pattern for settlements with other railway unions. If extended to all classes of employee in the railway industry, the award is expected to cost an additional £70,000,000 a year.

Winn & Coales Limited New Telephone Number.—The telephone number of Winn & Coales Limited, Denso House, Chapel Road, London, S.E.27, has been changed from Gipsy Hill 4247 to Gipsy Hill 7511.

Alltransport Limited, Importation to Machine Tool Exhibition.—Special arrangements have been made by Alltransport Limited for the transportation of exhibits from Continental and oversea countries for the International Machine Tool Exhibition to take place at Olympia, London, on June 25 to July 8.

Worthington Simpson Limited Results.—Profit by Worthington Simpson Limited for 1959, before tax, was £886,051 compared with £1,058,759 for 1958. Prospects for 1960 are encouraging with a high level of orders. Distribution will be 20 per cent. The meeting will take place in London on June 23.

Stewarts and Lloyds Limited Results.—Stewarts and Lloyds Limited is maintaining its interim dividend at 3 per cent on capital as increased by a seven-for-twenty rights issue for the year to end—September 1960. The previous year's final dividend was 8 per cent. The improvement in trade reported by the chairman last February has been maintained.

Closing of Wayside Stations on Glasgow Central to Carlisle Line.—Passenger train services will be withdrawn on June 13 from Wamphray, Dinwoodie, Nethercleugh, Ecclefechan, Kirtlebridge and Kirkpatrick stations, on the Glasgow Central to Carlisle main line of the Scottish Region, British Railways. Alternative rail facilities for passengers are available at Beattock, Lockerbie, Annan and Carlisle. Bus services operate in the areas affected. Arrangements have been made also for the collection and delivery of passenger train traffic. From the same date Dinwoodie and Nethercleugh goods stations will be closed and Wamphray, Ecclefechan, Kirtlebridge, and Kirkpatrick goods stations will be converted to unstaffed public sidings.

Heavy Whitsuntide Railway Traffic.—British Railways reports heavy passenger traffic during the Whitsun holiday period, particularly on excursion and other special trains. On Sunday and Monday alone, the Eastern Region carried 133,000 passengers to Southend, an increase of 11,000 compared with last year, and on Monday, in the Western Region, 34,000 passengers went by train to Barry, 21,000 to Weston-super-Mare, 9,000 to Dawlish, 9,000 to Porthcawl, and some 6,500 to Paignton. The recently electrified Kent Coast lines carried approximately 20 per cent more passengers than at Whitsun, 1959. Large numbers of passengers were also carried to the South Coast, North Wales, Blackpool, Morecambe, Belle Vue (Manchester), Cleethorpes, Skegness, and Scarborough. Traffic from the West Riding to Harrogate, Knaresborough, Ilkley, and Bolton, was exceptionally heavy.

Toledo Woodhead Extends Into Light Coil Springs.—Toledo Woodhead Springs Limited has acquired the freehold, plant and inventory of the light coil spring section of John Spencer & Sons (1928) Ltd. at Newburn-on-Tyne for a cash sum. A new company has been formed and the light coil spring business will now be carried on as an entirely separate concern, under the style of John Spencers (Light Springs) Limited. The directors are Mr. Frank Woodhead and Mr. Harry Spittlehouse. Continuity will be maintained by the retention of existing staff with Mr. A. H. Bantham as General Manager. Production at Newburn includes varieties of coil springs from the lightest required in industry up to springs of 4 to 5 in. dia. As Toledo Woodhead now make springs down to this size, this development will enable the combined enterprise to offer a complete range of coil springs from the smallest up to those suitable for commercial vehicles and tank suspension units.

Forthcoming Meetings

June 27 (*Mon.*) to July 1 (*Fri.*).—Institution of Electrical Engineers. Summer meeting in Scotland.

July 2 (*Sat.*).—Permanent Way Institution, London Section. Visit to Royal Albert Bridge, Plymouth. Joint visit with Exeter and West of England Section.

OFFICIAL NOTICES

BENGUELA RAILWAY COMPANY

At the Annual General Meeting of the Company held in Lisbon on 30 May, 1960, the following distribution of profits for the year 1959 was approved :—

	1959	Comparative Figures 1958	1957
	Escudos	Escudos	Escudos
Net Revenue	158,402,016	151,344,921	194,846,285
Deduct :			
Percentage to Portuguese Government, Deductions in accordance with the Articles of Association,	15,155,963		
	11,176,519	26,332,482	24,389,541	35,183,493
Balance available for distribution,	132,069,534	126,955,380	159,662,792
Add Transfer from General Reserve,	53,503,181	—	—
	185,572,715	126,955,380	159,662,792
Distributed as to :			
Debenture Service :			
Redemption of 4% Debentures	16,294,810	16,299,640	16,294,810
Interest of 4% Debentures for year 1959	8,359,635	9,011,621	9,663,413
Interest on 5% Debentures for year 1959	16,100,000	16,100,000	16,100,000
	40,754,445	41,411,261	42,058,223
Dividend of 12½% on Share Capital	82,500,000	82,500,000	99,000,000
Transferred to Dividend Equalisation Reserve	—	3,044,119	18,604,569
Advance Redemption of 4% Deventures	62,318,270	—	—
	185,572,715	126,955,380	159,662,792

NOTE.—New 5% debentures to the nominal value of Escudos 69,240,000, repayable as from 1 July, 1971, and chargeable as to interest and redemption on the earnings of the railway whether or not satisfied before the end of the Concession in the year 2001, will be issued forthwith to Tanganyika Concessions Limited for cash at a discount of 10%.

Tanganyika Concessions Limited owns all the Debentures and 90% of the Equity of the Benguela Railway.

80.5 Escudos = £1.

CORAS IOMPAIR EIREANN

MECHANICAL ENGINEERS & DRAUGHTSMEN. Applicants for the following posts are invited :—

(*a*) Senior Assistant Engineer (Mechanical). Salary scale, £1,375—£1,680 per annum.
(*b*) Assistant Engineers (Mechanical). Salary scale, £975—£1,280 per annum.
(*c*) Carriage & Wagon Draughtsman.
(*d*) Jig and Tool Draughtsman.
(*e*) Electrical Engineering Draughtsman.
(*f*) Mechanical Engineering Draughtsman.

Salary scales for Draughtsmen, £895—£945 per annum, or, £630—£870 per annum, according to experience and suitability.

Candidates for posts (*a*) and (*b*) must hold a University Degree in Mechanical Engineering and have had post-graduate apprenticeship training. Age limit for all posts 40 years.

Written applications, giving detailed particulars of age, qualifications and experience, should reach the Chief Engineer, C.I.E., Inchicore Works, Dublin, not later than 25 June, 1960.

CANVASSING WILL DISQUALIFY.

ALL Steel Broad Gauge Railway Wagons required for internal works use.

Half mile flat bottom rails, 35 lb./40 lb. Per yard. Seddon, Welsby & Co., 2a, Dewhurst Street, Manchester, 8.

Railway Stock Market

Conflicting factors have led to a return of uncertainty in stock markets, and as a result, the recent rally has been followed by profit-taking and a set-back in values. The reaction was not heavy, but the general assumption is that for the present markets are likely to continue to fluctuate because of renewed fears that sooner or later there may be a tighter credit squeeze. There have even been revived suggestions that the bank rate might be increased, and this partly accounts for the further reaction in British Funds, though it is generally believed in the City that if fresh measures do prove necessary they are likely to relate specifically to the credit squeeze and not to the bank rate. Perhaps the most effective way of achieving results would be to increase the special deposits the banks now have to make to the Bank of England. The trend in our gold and convertible currency reserves over the next few months may be a key pointer. If they begin to show a fall at this stage it would be a warning sign that export trade is not making a satisfactory showing, and this might in the opinion of the Chancellor call for a tighter credit squeeze to reduce spending at home, and induce industry to give increased attention to export markets.

Among foreign rails, Antofagasta remained depressed not having recovered from their recent set-back, the ordinary stock being 12½ and the preference 28½. United of Havana second income stock was again 6, San Paulo Railway 3s. units 1s. 3d., and Mexican Central "A" bearer debentures 59½. Costa Rica ordinary stock remained at 37, Chilean Northern first debentures at 59½, and Brazil Railway bonds strengthened to 6½.

International of Central America kept at $24 and the preferred at $111. Paraguay Central prior debentures were again quoted at 15½ and Guayaquil & Quito assented bonds at 77.

Nyasaland Railways shares kept at 10s. West of India Portuguese stock was 111 and Barsi held their higher level of 18.

Canadian Pacifics eased to $45½, at which there is a yield of not far short of 6 per cent, which looks attractive compared with the return on many other dollar stocks. The 4 per cent debentures were 63½ and 4 per cent preference 58¾; the yield on the latter is nearly 6¾ per cent, which must be regarded as generous, even allowing for the fact that the dividend is non-cumulative, a factor which is, of course, largely academic, because there would be no question of non-payment of the preference dividend unless there were a period of severe slump in the Canadian economy. White Pass shares were $12¼.

The shares of locomotive builders and engineers moved lower with the trend of stock markets, but declines were generally not more than a few pence. Beyer Peacock 5s. shares eased to 7s. 6d. at which there is a yield of nearly 7¾ per cent, Charles Roberts 5s. shares which were 13s. 3d., yield over 5¾ per cent on the basis of last year's 15 per cent dividend, while Westinghouse Brake at 50s. yield little more than 4¼ per cent, which, however, reflects hopes of higher dividend prospects. Associated Electrical have eased to 56s. 6d., English Electric to 40s. 9d. and General Electric to 39s. 9d.

North British Locomotive were well maintained at 9s. 3d. and Birmingham Wagon 32s. 4½d. with Wagon Repairs 5s. shares 12s. 9d. and Gloucester Wagon 10s. shares 11s. 3d. Moving with the general market trend, Dowty Group 10s. shares came back to 37s. 3d. and Pressed Steel 5s. shares at 33s. 9d. were also lower on balance. Stone-Platt held steady at 55s. on further consideration of the financial results. Reflecting the merger terms, Davy-United rose to 119s. 6d. and Power Gas to 99s. 6d.